

REVIEW OF MEDICAL AND VETERINARY MYCOLOGY

(Formerly issued as *An Annotated Bibliography of Medical Mycology*)

VOL. I

1952

PART 11

2188. ROBINSON (H. M.), ROBINSON (H. M.), & LINK (H. V.). **Studies in the treatment of tinea capitis. II. Butyl 1-butanethiolsulfinate (Win 717).**—*Bull. Sch. Med. Univ. Md*, 36, 1, pp. 16–18, 1951.

Of 103 children (including 50 negroes) from 2 to 14 years old treated with butyl 1-butanethiolsulphinate (a synthetic analogue of allyl 2-propene-1-thiolsulphinate, the anti-bacterial principle of garlic), 16 were cured (15.5 per cent.) and 30 were not benefited after six months of therapy; 34 received less than one month of treatment. The minimum period required to produce a cure was four months and the maximum 14. The results in this series are not considered to warrant the further use of the drug in the treatment of tinea capitis.

2189. AJELLO (L.). **The nature of the so-called macroconidia observed on *Microsporum*-infected hairs.**—*J. invest. Derm.*, 16, 1, pp. 3–6, 3 figs., 1951.

Spindle-shaped, probably root sheath cuticle cells are not infrequently found in association with hairs taken from both normal and mycotically infected scalps, and have been mistaken for the macroconidia of *Microsporum canis* [No. 1475]. A distinction, however, can readily be made on the basis of size, the root sheath cuticle cells measuring 25 to 32 μ and the macroconidia 60 to 85 μ in length.

2190. ALKIEWICZ (J.). **Dwa przypadki mikrosporii spowodowane przez *Microsporon felineum* (Fox).** [Two cases of tinea capitis due to *Microsporon felineum* (Fox).]—Reprinted from *Przegl. dermat.*, 36, 1–2, 4 pp., 1 pl., 1949. [English summary. Received May, 1951.]

The author describes two cases of tinea capitis in children caused by *Microsporum felineum* [*M. canis*], not previously recorded from Poland.

2191. JOHNSON (S. A. M.) & REEDAL (JEANETTE S.). **Characterization of the pigment produced by *Microsporum fulvum* in casein hydrolysate medium.**—*J. invest. Derm.*, 16, 4, pp. 275–280, 1951.

At the Wisconsin Medical School, Madison, Wisconsin, the pigment produced by *Microsporum fulvum* [*M. gypseum*] in a casein hydrolysate medium was extracted and found to be very soluble in sodium hydroxide; moderately so in dilute hydrochloric acid, sodium bicarbonate, ammonium hydroxide, water, and formaldehyde; slightly to sparingly soluble in dioxane, anhydrous sodium carbonate, dilute acetic acid, dilute ethyl alcohol, acetone, concentrated hydrochloric acid, and glacial acetic acid; and generally insoluble in organic solvents. Tests for protein, sugars, and phenols elicited negative results, but a positive reaction was evoked by the Molisch test for carbohydrates. The *M. fulvum* [*M. gypseum*] pigment is relatively stable under the action of heat, light, and strong acids and alkalis, and is dialysable.

2192. VANBREUSEGHEM (R.) & BORGERS (G.). **A propos d'une souche de Sabouraudites (*Microsporium*) gypseus isolée au Congo belge.** [Concerning a strain of *Sabouraudites* (*Microsporium*) *gypseus* isolated in the Belgian Congo.]—*Ann. Soc. belge Méd. trop.*, 31, 3, pp. 377–382, 1951. [Flemish summary.]

Shortly after arrival in the Belgian Congo a seven-year-old European girl developed a mycotic infection, originating as a small papule on the right wrist and later appearing on the left shoulder-blade in the form of a circinate herpes. The fungus isolated from the squamæ of the lesions was identified as *Microsporium gypseum*. It was furnished with flagelliform appendages identical with those described in connexion with *S. duboisii* [Nos. 1483, 1762], the function of which is not yet clear. Whether the fungus is indigenous to the Congo or was introduced from Europe is uncertain. A cure was rapidly effected by combined applications of iodized alcohol and fungetol.

2193. ECHENIQUE (L.). **Micosis ovina.** [Ovine mycosis.]—*Rev. Med. vet., Montevideo*, 25, 49, pp. 987–1067, 13 figs., 1950. [French and English summaries.]

Ovine mycosis, caused by a species of *Microsporium*, is a newly recognized disease in Uruguay, where it is responsible for a high percentage of mortality. Two forms are distinguished, namely, a dermatomycosis chiefly affecting lambs and a generalized endomycosis, which may assume an acute, apoplectic, or chronic character. The disease was experimentally reproduced in guinea-pigs, rabbits, and sheep by means of subcutaneous, intraperitoneal, and endovenous inoculation, some strains of the fungus being lethal to sheep in 12 to 15 hours. In addition to the clinical symptoms, the inoculation of blood from diseased animals into standard culture media affords a reliable method of diagnosis. Post-mortem examination reveals congestion of the digestive and respiratory tracts, pale yellow subcutaneous oedema, and liquid in the thorax and peritoneum. Smears from the spleen, kidneys, and liver yield numerous forms of the causal organism. Rabbits and sheep were immunized by experimental infection, resisting subsequent inoculation at a dosage which killed the controls.

2194. FISCHER (E.). **Beitrag zur Frage der Infektiosität der Strümpfe und Schuhe bei Patienten mit Fussmykosen.** [Contribution to the question of the infectivity of stockings and shoes in patients with foot mycoses.]—*Dermatologica*, 103, 2, pp. 97–109, 1951. [English and French summaries.]

Only two of the 320 cultures from stocking and shoe material of 142 patients suffering from tinea pedis at the Dermatological Clinic of the University of Switzerland, Zürich, yielded *Epidermophyton* Kaufmann-Wolf [*Trichophyton interdigitale*]. The prolific growth of yeasts and moulds, however, complicated the isolation of dermatophytes from the mixed flora of the material. Standard tests with cultures of *T. interdigitale* and *T. gypseum* [*T. mentagrophytes*] on wool, cotton, artificial silk, silk, and nylon showed, firstly, that the fungi do not penetrate the fibres but merely grow round them, and, secondly, that they can be destroyed within 24 hours, without damage to the material, by immersion in aqueous solutions of 0.2 per cent. merfen, 2 per cent. desogen, or 1 per cent. bradosol.

2195. SCIGLIANO (J. C.), GRUBB (T. C.), & SHAY (D. E.). **Fungicidal testing of some organo-copper compounds.**—*J. Amer. pharm. Ass.*, 39, 12, pp. 673–676, 1950.

Using McCrea's modification of the Schamberg-Kolmer method (*J. Lab. clin. Med.*, 55, p. 538, 1940), the writers tested eight organo-copper complexes in comparison with salicylic acid for their toxicity to the dermatophytes *Epidermophyton* [*Trichophyton*] *interdigitale*, *T. gypseum* [*T. mentagrophytes*], and *T. mentagrophytes*. Although some of the compounds were more active

than others, the results were not considered sufficiently promising to warrant further trials. Salicylic acid was of much higher potency, especially against the generally more sensitive *T. interdigitale*.

2196. McDAVID (J. E.) & DANIELS (T. C.). **The fungistatic properties of acenaphthene derivatives.**—*J. Amer. pharm. Ass.*, 40, 7, pp. 325–327, 1951.

None of the 11 acenaphthene derivatives tested against Sabouraud's maltose agar cultures of *Trichophyton mentagrophytes* at the College of Pharmacy, University of California, showed more than a moderate degree of activity.

2197. HAXTHAUSEN (H.). **Treatment of superficial trichophytosis with CO₂ snow. An attempt at artificial immunisation ('imitated kerion').**—*Acta dermat. venerol., Stockh.*, 30, 5, pp. 405–416, 2 figs., 1950. [French and German summaries.]

In an attempt to induce artificially local inflammatory changes simulating 'kerion' and its attendant processes [cf. No. 1984], the author successfully treated 24 cases of superficial trichophytosis at the State Hospital, Copenhagen, Denmark, by means of firm pressure for five seconds with a stick of carbon dioxide snow. Cultures were obtained in about half the cases and consisted mainly of *Trichophyton gypsum asteroides* [*T. mentagrophytes*], with single instances of *Achorion* [*Microsporum*] *gypseum* and *T. violaceum*.

2198. FURTADO (A. DA R.). **A propósito de uma epidemia de tinha no Rio de Janeiro, causada pelo Trichophyton mentagrophytes (Ch. Robin, 1853) Blanchard, 1896.** [On an epidemic of tinea in Rio de Janeiro, caused by *Trichophyton mentagrophytes* (Ch. Robin, 1853) Blanchard, 1896.]—*Mem. Inst. Oswaldo Cruz*, 45, 2, pp. 407–440, 28 figs., 1947. [*B.A.*, 23, No. 15928.]

An account is given of an epidemic of tinea in an institution for boys six to nine years of age. The organism isolated was *Trichophyton mentagrophytes*.

2199. FRANKS (A. G.) & FRANK (S. B.). **Extensive verrucous dermatitis associated with dermatophytosis and onychomycosis due to Trichophyton gypsum.**—*Arch. Derm. Syph., Chicago*, 63, 4, pp. 489–493, 4 figs., 1951.

A case of extensive verrucous dermatitis with horn formation on the feet, due to *Trichophyton gypsum* [*T. mentagrophytes*], in a 14-year-old boy is reported from the New York University Post-Graduate Medical School, where the authors received technical assistance from Frances M. Karpluk. A search through the pertinent literature failed to reveal any similar manifestation connected with a *Trichophyton*.

2200. FISCHER (V.) & NOVÁK (J.). **Náše zkušenosti s undecylenkyselinou.** [Our experiences with undecylenic acid.]—*Čsl. Derm.*, 25, 7–8, pp. 273–278, 1950. [Abs. in *Dermatol. & Venerol. (Excerpt. med., Sect. XIII)*, 5, 7, p. 293, 1951.]

Excellent results are reported from the University Dermatological Clinic, Prague, Czechoslovakia, in the prophylaxis of mycotic infections among agriculturists, miners, soldiers, and sportsmen by means of undecylenic acid [Nos. 2008, 2019, 2203, 2216].

2201. MIOVSKI (D.) & KORTING (G.). **Eksperimentalni prilog pitanju endogenih faktora u pojani gljivične infekcijekod Zečeva.** [Experimental contribution on the internal conditions of fungous infections in Rabbits.]—*Srpski Arhiv*, 48, 6, pp. 393–401, 1950. [*B.A.*, 25, No. 11274.]

Three rabbits with experimental liver cirrhosis induced by carbon tetrachloride showed the same susceptibility when inoculated with *Trichophyton gypsum* [*T. mentagrophytes*] as two normal controls infected with the same suspension. When susceptibility to infection by *T. mentagrophytes* of three untreated rabbits was compared with that of three rabbits previously treated

intravenously with India ink, infection and the initial growth of fungous inocula were increased by the India ink 'blockade of the reticulo-endothelial system', but ten days after infection the lesions in both groups of animals presented the same appearance.

2202. LANGER (J.). **Prispěvek ke standardisaci trichophytinu.** [Contribution to the standardization of trichophytin].—*Čsl. Derm.*, 25, 7-8, pp. 293-297, 1950. [Abs. in *Dermatol. & Venereol. (Excerpt. med., Sect. XIII)*, 5, 7, p. 293, 1951.]

The most common dermatophyte encountered at the University Dermatological Clinic, Prague, Czechoslovakia, was *Trichophyton gypsum asteroides* [*T. mentagrophytes*]. Dried trichophytin from freshly isolated strains is used as a standard antigen.

2203. D'ATRI (G.). **L'acido undecilenico nella cura delle epidermomicosi.** [Undecylenic acid in the therapy of epidermomycoses].—*Ann. ital. Derm. Sif.*, 5, 5, pp. 265-273, 1950.

From the Dermatological Clinic of the University of Pavia, Italy, the author reports the successful treatment of various forms of dermatomycosis (*T[richophyton] gypsum asteroides* [*T. mentagrophytes*], *T. violaceum*, and *T. rosaceum*) in 22 patients and of pityriasis versicolor (*Microsporum [Malassezia] furfur*) in one case with 'mycilen', an ointment consisting of 0.5 gm. undecylenic acid [No. 2200], 1.5 gm. copper undecylenate, and 6 gm. excipient. One case of very limited inflammatory ringworm (*T. violaceum*) also reacted favourably, but three patients suffering from favus (*Achorion [T.] schoenleini*) failed to benefit by the treatment.

2204. LANDIS (L.) & KROP (S.). **Influence of histamine upon fungistatic action of antihistaminics.**—*Proc. Soc. exp. Biol., N.Y.*, 76, 3, pp. 538-540, 1951.

At the Warner Institute for Therapeutic Research, New York, several antihistaminics were shown to be fungistatic, preventing the growth of *Trichophyton mentagrophytes*. They include (in descending order of efficiency) theraphorin (phenindamine tartrate), diatrine (metaphenylene hydrochloric acid), benadryl (diphenhydramine hydrochloric acid), pyribenzamine (tripelenamine hydrochloric acid), thenylene (methapyriline hydrochloric acid), and neo-antergan (pyranisamine maleate). The effect is counteracted by appropriate dosages of histamine, but not by histidine.

2205. KLIGMAN (A. M.), BALDRIDGE (G. D.), REBELL (G.), & PILLSBURY (D. M.). **The effect of cortisone on the pathologic responses of Guinea Pigs infected cutaneously with fungi, viruses, and bacteria.**—*J. Lab. clin. Med.*, 37, 4, pp. 615-620, 1951.

At the University of Pennsylvania School of Medicine, Philadelphia, the course of infection in guinea-pigs inoculated cutaneously with *Trichophyton mentagrophytes*, vaccinia virus, and *Staphylococcus aureus* was adversely influenced by the administration of cortisone. There was no depression of cutaneous sensitivity to trichophytin and vaccinia in the animals receiving cortisone.

2206. ANSARI (N.) & FAGHIN (M.). **Détermination de dermatophytes agents des teignes du cuir chevelu à Téhéran.** [Determination of dermatophytes causing ringworm of the scalp in Teheran].—*Ann. Parasit. hum. comp.*, 36, 3, pp. 245-259, 6 pl., 1951.

Examination of 145 cases of ringworm of the scalp in Teheran, Persia, showed that 83 were caused by *Trichophyton milochewitchi*, 14 by *T. brumpti*, six by *T. schoenleini*, two by *T. pittalugai*, 37 by *T. violaceum*, two by *Microsporum audouini*, and one by *Ctenomyces [T.] mentagrophytes*.

2207. LOEWENTHAL (K.) & REIN (R. L.). **Tinea barbae of the kerion type produced by *Trichophyton purpureum* : report of a case.**—*J. Amer. med. Ass.*, 64, 2, pp. 194–195, 1951.

A case of tinea barbae of the deep-inflammatory kerion type is reported from New York. *Trichophyton purpureum* [*T. rubrum*] was isolated on dextrose-peptone agar from pus from the draining sinuses.

2208. WOOLDRIDGE (W. E.). **An unusual case of multiple fungus infection.**—*Arch. Derm. Syph.*, Chicago, 63, 5, pp. 633–635, 1 fig., 1951.

A 28-year-old male patient of the author's at Springfield, Missouri, had suffered from 'athlete's foot' in warm weather for the past ten years, during the last two of which he had experienced increasing redness and scaling of the right hand, accompanied by dystrophy and discoloration of the thumb nail. Cultures on Sabouraud's agar from the palm of the hand yielded *Trichophyton rubrum*, from the toes of both feet *T. interdigitale*, and from the toes of the left and the sole of the right foot *Epidermophyton floccosum*, the gross appearance of which on the latter site was unusual. Treatment consisted of two daily applications of 0.25 per cent. anthralin cream to the right hand, 2 per cent. iodine crystals in benzine to the thumb nail, and half-strength benzoic and salicylic acid (Whitfield's) ointment nightly to the feet, with liberal amounts of zincundecate (desenex) powder [No. 1267] during the day. After 4½ months the thumb nail was cured and the hand improved, while the feet were rapidly cleared of all apparent infection.

2209. CHAN (E.). **Trichophytosis of the eye.**—*Chin. med. J.*, 69, 5–6, pp. 263–264, 1 fig., 1951.

A case of trichophytosis (*Trichophyton schoenleinii*), involving the cornea, conjunctiva, eyelids, and face of a 21-year-old female, had been under observation for more than six months at the time of writing at the Lingnan University Medical College, Canton, China. The condition originated five years earlier shortly after swimming in a stream. Cultures on Sabouraud's agar presented the typical favic chandeliers and chlamydospores as described in mycological text-books [Nos. 418, 419].

2210. KLIGMAN (A. M.) & CONSTANT (ELIZABETH R.). **Family epidemic of tinea capitis due to *Trichophyton tonsurans* (variety *sulfureum*).**—*Arch. Derm. Syph.*, Chicago, 63, 4, pp. 493–499, 4 figs., 1951.

An epidemic of tinea capitis due to *Trichophyton tonsurans* var. *sulfureum* [? *T. sulphureum*], involving five members of a family, is reported from the University of Pennsylvania School of Medicine, Philadelphia. Previous diagnoses had been incorrect owing to the absence of the characteristic fluorescence under Wood's light of hairs infected by *Microsporum* spp., the most prevalent agents of the complaint in the United States. Three of the patients (one of whom was free of scalp lesions) also suffered from onychomycosis. Roentgen-ray epilation provided a cure for the ringworm, and the associated glabrous lesions regressed rapidly under treatment with benzoic and salicylic acid (Whitfield's) ointment, but the onychomycosis failed to yield to the application of ammoniacal silver nitrate.

2211. GREENHOUSE (J. M.). ***Trichophyton violaceum* infection of scalp and glabrous skin of an adult.**—*Arch. Derm. Syph.*, Chicago, 63, 4, pp. 503–506, 1951.

Trichophyton violaceum was identified as the agent of a scalp eruption in a 61-year-old female at East St. Louis, Illinois. The symptoms originated three years previously on the hands and spread upwards by way of the chest and shoulders. There was no fluorescence under Wood's light.

2212. FISCHER (J. B.) & MARKANEN (M. V.). **Sporotrichosis.**—*Canad. med. Ass. J.*, 65, 1, pp. 49–50, 1951.

Following an introductory survey of the available information on sporotrichosis, the authors report a case of infection by *Sporotrichum schencki*, originating on the right wrist and spreading up the forearm of a female florist's assistant at Toronto, Ontario. Benefit was derived from an eight-week course of iodides at 100 grains daily. Pure cultures of the fungus developed on Sabouraud's and Littman's agar. It proved to be highly pathogenic to mice. This is believed to be the first authentic record of the species in Canada.

2213. BEZPALIJ (I. G.). **La branchiomycose de la Carpe.** [Branchiomycosis of the Carp].—*Trud. Inst. Zool. U.R.S.S.*, 2, pp. 70–85, 1949. [Ukrainian. Abs. in *Bull. analyt. C.N.R.S.*, 12, 2, p. 44, 1951.]

Branchiomycosis (*Branchiomyces sanguinis* and *B. denigrans*) is responsible for a mortality of 28.5 to 55.5 per cent. among carp in the U.S.S.R., generally during the period between June and September. The hyphae infiltrate into the capillaries of the gills, the veins, the arteries, and the epithelial and conjunctive tissue of the branchia.

2214. SORSBY (A.). **Systemic ophthalmology.**—xiv+712+[21] pp., 38 col. pl., 309 figs., London, Butterworth & Co. Ltd., 1951.

The section of this treatise dealing with mycotic infections of the eye (pp. 299–315) is contributed by H. L. BIRGE, Assistant Clinical Professor of Ophthalmology, Yale University; Associate Ophthalmologist, Hartford Hospital, Connecticut.

2215. AJELLO (L.), GRANT (VIRGINIA Q.), & GUTSKE (M. A.). **The effect of tubercle bacillus concentration procedures on fungi causing pulmonary mycoses.**—*J. Lab. clin. Med.*, 38, 3, pp. 486–491, 1951.

In this report from the Laboratory Services, Communicable Disease Center, Public Health Services, Federal Security Agency, Washington, D.C., the effects of four tubercle bacillus concentration procedures on seven pathogenic fungi, viz., *Blastomyces dermatitidis*, *Candida albicans*, *Coccidioides immitis*, *Cryptococcus neoformans*, *Geotrichum candidum*, *Histoplasma capsulatum*, and *Nocardia asteroides*, are described and tabulated. In general, the fungi could not survive the methods employed, but *N. asteroides* was isolated from sputum in every test using trisodium phosphate as the digestant, *Candida albicans* was recovered in all cases by means of the sulphuric acid procedure, while *Cryptococcus neoformans* withstood digestion with sodium hydroxide in the technique utilizing a 1 to 1 ratio of sputum and 4 per cent. alkali. Any such survivors should be carefully examined for potential diagnostic significance.

2216. CARBONERA (P.). **Azione fungistatica e fungicida dell' acido undecilenico su alcuni ceppi fungine.** [Fungistatic and fungicidal action of undecylenic acid on some fungal strains].—*Rev. Ist. sieroterap. ital.*, 26, 1, pp. 43–53, 3 graphs, 1951. [English summary.]

The minimum doses of undecylenic acid [Nos. 2013, 2019, 2203] required to inhibit the growth on Sabouraud's agar of *Histoplasma farciminosum*, *Trichophyton granulosum*, *Pityrosporum ovale*, and *Candida albicans* in the author's experiments at the Institute of Anatomy and Pathological Histology, University of Milan, were 1 in 10,000, 1 in 10,000, 1 in 500, and 1 in 500, respectively.

2217. BLANK (F.). **In vitro fungistatic action of phenanthrolines against pathogenic fungi.**—*Nature, Lond.*, 168, 4273, pp. 516–517, 1951.

In 1948, studies at McGill University, Montreal, showed that several

phenanthrolines had fungistatic properties; *o*-phenanthroline, highly bacteriostatic against Gram-positive and Gram-negative bacteria, exerted a stronger growth-inhibiting effect against *Trichophyton interdigitale* than *p*- or *m*-phenanthroline. Alkylation of *o*-phenanthroline increased its fungistatic effect, but further alkylation on chlorination caused a reduction. Of all the phenanthrolines tested 2,9-dimethyl-*o*-phenanthroline was the most potent; it remained effective in M/1,600 solution and when serum was added to the medium. It displayed marked bacteriostatic properties against Gram-positive bacteria. Its spectrum of effectiveness includes numerous genera and species of fungi pathogenic to man and animals. *Blastomyces dermatitidis*, for example, failed to grow in an agar medium containing 10 per cent. serum plus 0.002 per cent. of the compound, and its development was markedly inhibited in concentrations of 0.001 to 0.0005 per cent.

2218. DAVISSON (J. W.), TANNER (F. W.), FINLAY (A. C.), & SOLOMONS (I. A.). **Rimocidin, a new antibiotic.**—*Antibiot. & Chemother.*, 1, 5, pp. 289–290, 1951.

At the Research Laboratories, Charles Pfizer & Co., Inc., Brooklyn, New York, rimocidin, an antibiotic isolated, in addition to terramycin [No. 2068], from culture broths of *Streptomyces rimosus* by extraction of the mycelium in *n*-butanol, at 5 mcgm. per ml. completely inhibited the growth on mycophil agar at 28° C. of *Histoplasma capsulatum*, *Blastomyces brasiliensis*, *Sporotrichum schencki*, *Hormodendrum* [*Phialophora*] *compactum*, *P. verrucosa*, *Trichophyton violaceum*, and *Candida albicans*, *B. dermatitidis* and *T. sulphureum* succumbed to a concentration of 10 mcgm. per ml., but *Cryptococcus neoformans* was only partially inhibited even at this strength. Rimocidin is haemolytic for human and rabbit red cells at 30 mcgm. per ml, and the acute intravenous LD₅₀ of the antibiotic in the mouse is approximately 30 mgm. per kg. body weight.

2219. STRITZLER (C.), FISHMAN (I. M.), & LAURENS (S.). **Treatment of superficial fungus infections with a new antifungal agent.**—*Trans. N.Y. Acad. Sci.*, Ser. II, 13, 1, pp. 31–37, 1950.

Used in conjunction with a hygienic regimen, 5 per cent. asterol dihydrochloride has proved an effective topical remedy against tinea capitis caused by *Microsporum audouinii* (34 out of 61 patients cured and 14 improved) and *M. canis* (16 out of 21 cured and one improved) in New York [No. 2186]. It has also given promising results in the therapy of tinea corporis (*Trichophyton purpureum* [*T. rubrum*], *T. gypseum* [*T. mentagrophytes*], and *M. canis*), with 12 cures and 20 improvements out of 35; tinea pedis (*T. rubrum*, *T. mentagrophytes*, and *Candida albicans*)—25 cures and 14 improvements out of 41; tinea corporis caused by the same three fungi (13 and 8, respectively, out of 22); tinea versicolor (*M. [Malassezia] furfur*), with all 18 cases cured; paronychia and onychia (*C. albicans*)—12 cures and 4 improvements out of 21; and another manifestation of *C. albicans*, with six patients cured and eight improved out of 14.

[A preliminary account of the application of the new drug to the treatment of tinea capitis appeared in *Arch. Derm. Syph.*, Chicago, 63, 5, pp. 606–610, 1951.]

2220. DE MONTEMAYOR (L.). **Síntesis estadística y algunas conclusiones sobre 206 exámenes micológicos.** [Statistical synthesis and some conclusions on 206 mycological examinations.]—*Rev. Med. vet. Parasitol.*, 9, 1–4, pp. 85–96, 1950. [English summary.]

At Caracas, Venezuela, 27 (42.9 per cent.) of the 63 hair samples examined during the year from October, 1948, to October, 1949, were positive for tinea,

of which both the ecto- and endothrix types were represented, the former by *Microsporum canis* and *Trichophyton mentagrophytes* and the latter by *T. epilans* and *T. tonsurans*. *Epidermophyton floccosum* was isolated from a case of eczema marginatum of Hebra and *T. purpureum* [*T. rubrum*] from one of onychomycosis. *Paracoccidioides brasiliensis* was cultured from five out of ten specimens of paracoccidioidial granuloma. Material from a case of mycetoma of the foot yielded *Actinomyces* [*Nocardia*] *asteroides*. Of four samples from the external auditory canal two were positive, one for *Aspergillus* sp. and the other for *Helminthosporium* sp. Four of the six yeast cultures emanating from cases of oesophagitis and bronchomoniliasis were identified as *C. albicans* and two as *C. tropicalis*. A species of *Geotrichum* was cultured from sputum. *Cryptococcus neoformans* and *Coccidioides immitis* were each isolated for the first time in Venezuela. *Phialophora pedrosoi* is commonly associated with chromomycosis. Eight out of ten samples of 'piedra' gave rise to *Piedraia hortai* [Nos. 591, 650, 1240, 1746] and two to *Trichosporon beigeli* [No. 1480]. The relation between infection by *Sporotrichum schencki* and excessively heavy precipitation, demonstrated by Mackinnon in Uruguay [No. 2033], was supported by the occurrence of two Venezuelan cases in June and July.

2221. EMMONS (C. W.). **The isolation from soil of fungi which cause disease in Man.** *Trans. N.Y. Acad. Sci.*, Ser. ii, 14, 1, pp. 51-55, 1952.

From a perusal of the relevant literature, 26 contributions to which are listed, and from his own experience the author concludes that more attention should be paid to the occurrence in soil of fungi pathogenic to man. He has grown on ordinary unenriched garden soil, sterilized in the autoclave at 15 lb. pressure for 20 minutes and incubated at 30° C., *Trichophyton mentagrophytes*, *Cryptococcus neoformans*, *Blastomyces dermatitidis*, *Coccidioides immitis*, *Histoplasma capsulatum* [No. 2145], *Sporotrichum schencki*, *Allescheria boydii* [loc. cit.], *Phialophora pedrosoi*, and *P. verrucosa*.

2222. EPSTEIN (S.). **Influence of antihistamines on skin tests with bacterial and fungous antigens.**—*J. invest. Derm.*, 17, 3, pp. 165-169, 2 diags., 1951.

In experiments (with the assistance of Beatrice Paulson) at the Marshfield Clinic, Marshfield, Wisconsin, the simultaneous injection of antihistamines (histadyl and benadryl) exercised no regular effect on the delayed tuberculin type reaction to various bacterial and fungal antigens (oidiomyein 1 in 100 and trichophytin [Nos. 2003, 2017] 1 in 30. The immediate reaction of staphylococcal toxoid was markedly diminished, but the immediate response to other bacterial and the above-mentioned fungal antigens was not influenced.

2223. GONZÁLEZ OCHOA (A.) & BOJALIL (L. F.). **Actividades 'in vitro' de complejos sulfa-cobre sobre algunos hongos patógenos.** [*In vitro* activities of sulpha-copper compounds towards some pathogenic fungi].—*Rev. Inst. Salubr. Enferm. trop.*, 11, 2-4, pp. 79-91, 1950. [English summary.]

At the National School of Biological Sciences, Mexico City, the writers tested the potency of ten copper-sulphonamide compounds against Sabouraud's dextrose agar cultures of *Candida albicans*, *Cryptococcus neoformans*, *Hormodendrum* [*Phialophora*] *pedrosoi*, *Blastomyces dermatitidis*, *Epidermophyton floccosum*, *Nocardia brasiliensis*, and *N. asteroides*. Copper-sulphamerazine at 1 in 10,000 inhibited the growth of *P. pedrosoi*, while copper sulphathiazole was similarly fungistatic to *N. brasiliensis* [No. 1571] at 1 in 150,000. *C. neoformans* seemed to be actually stimulated by the compounds, judging by its luxuriant growth in the treated cultures, while the other organisms were resistant to their action at therapeutic concentrations.

2224. LANDIS (L.), KLEY (D.), & ERCOLI (N.). **Antifungal activity of a series of thiocyanates.**—*J. Amer. pharm. Ass.*, 40, 7, pp. 321–325, 1 graph, 1951.

Of over 100 aryl oxyalkyl derivatives of thiocyanates and isothiocyanates tested against fungi pathogenic to man at the Warner Institute for Therapeutic Research, New York, γ (*p*-bromo) phenoxypropyl thiocyanate proved to be the most potent. It was fungicidal to *T[richophyton] mentagrophytes*, *T. purpureum* [*T. rubrum*], and *E[pidermophyton] floccosum* at 1 in 400; fungistatic (in solution) to *T. mentagrophytes* at 1 in 50,000, *C[ryptococcus] neoformans* at 1 in 10,000, and *E. floccosum* at 1 in 4,000; and sporostatic to *A[spergillus] fumigatus* at 1 in 40,000, *T. mentagrophytes* at 1 in 60,000, and *T. rubrum* at 1 in 100,000.

2225. AINSWORTH (G. C.). **Presidential address. A century of medical and veterinary mycology in Britain.**—*Trans. Brit. mycol. Soc.*, 34, 1, pp. 1–16, 1951.

After a brief introduction dealing with the beginning of medical mycology, which is traced to the experimental demonstration by Agostino Bassi in 1835 that muscardine disease of silkworms is due to the fungus now known as *Beauveria bassiana*, the author reviews and discusses research in Britain during the nineteenth century on the dermatophytes or ringworm fungi, human systemic mycoses, and animal mycoses. The paper concludes with a section on recent developments, including the official recognition of medical mycology by the Public Health Service, and a select list of 58 British publications is appended.

2226. RIDDELL (R. W.). **Survey of fungus diseases in Britain.**—*Brit. med. Bull.*, 7, 3, pp. 197–200, 1951.

In a brief introduction to this survey of the mycoses occurring in Great Britain [Nos. 1557, 1558] the author states that some 4,000 specimens are submitted annually for examination to the Mycological Reference Laboratory attached to the London School of Hygiene and Tropical Medicine. Six groups are differentiated, namely, (1) dermatophytes, represented by *Microsporum audouinii*, *M. canis*, *M. gypseum*, *Trichophyton mentagrophytes*, *T. interdigitale*, *T. rubrum*, *T. discoides*, *T. sulphureum*, *T. schoenleini*, and *Epidermophyton floccosum*; (2) superficial infections, of which only pityriasis versicolor [*Malassezia furfur*] is encountered with any regularity, otomycosis (*Aspergillus niger* or *A. flavus*) being rare; (3) aspergillosis (*A. fumigatus* [No. 1058]; (4) yeast-like organisms, comprising *Candida albicans*, *C. krusei*, and *Cryptococcus neoformans* [No. 1361]; (5) actinomycosis (*Actinomyces israeli*); and (6) systemic mycoses, including *Blastomyces dermatitidis* (reported only once, in 1925), coccidioidomycosis (*Coccidioides immitis*) as a laboratory infection [No. 1143], and histoplasmosis (*Histoplasma capsulatum*) [No. 1058]. A note is given on methods of diagnosis.

2227. NORDÉN (A.). **Interna svampsjukdomar.** [Systemic mycoses].—*Nord. Med.*, 47, 9, pp. 271–275, 1952. [English summary.]

This is a survey of the literature on the systemic mycoses, among which cases of actinomycosis (*Actinomyces* sp.), nocardiosis (*Nocardia asteroides*), cryptococcosis (*Cryptococcus neoformans*), moniliasis (*Candida albicans*), geotrichosis (*Geotrichum candidum*), sporotrichosis (*Sporotrichum schenckii*) and aspergillosis (*Aspergillus fumigatus*) have been reported from the Scandinavian countries.

2228. SALVIN (S. B.) & HOYER (B. H.). **Growth of *Actinomyces bovis* : quantitative cultural methods.**—*Proc. Soc. exp. Biol.*, N.Y., 78, 1, pp. 128–130, 2 figs., 1 graph, 1951.

Cultural methods are described for obtaining concentrated growth of *Actinomyces bovis* [*A. israeli*] from human sources in a dialysable liquid

medium, which provides the most advantageous conditions for studies on antigens and growth substances. Quantitative techniques were used for the determination of growth and a special ridged tube was designed for the culture of the fungus in a liquid medium under ordinary atmospheric conditions.

2229. COPE (V. Z.). **Actinomycosis of bone with special reference to infection of the vertebral column.**—*J. Bone Jt Surg.*, 33-B, 2, pp. 205–214, 6 figs. (1 col.), 1951.

The pathology of actinomycosis [*Actinomyces israeli*] is summarized, with special reference to its mode of invading bone by direct spread. The manifestations, diagnosis, and treatment of spinal involvement are considered. The literature on the subject is brought up to date with (a) a summary of 15 cases published since the last collected series of 47 (*J. Bone Jt Surg.*, 17, p. 857, 1935), and (b) notes of three cases previously unreported, making a total (with Brett's contribution) [see next entry] of 66.

2230. BRETT (M. S.). **Advanced actinomycosis of the spine treated with penicillin and streptomycin: report of a case.**—*J. Bone Jt Surg.*, 33-B, 2, pp. 215–220, 9 figs., 1951.

A case of extensive spinal actinomycosis (*Actinomyces*) [*israeli*: see preceding and next entries], undiagnosed for nearly five years, in a 42-year-old male patient at St. Mary's Hospital, London, responded in a remarkable manner to the intramuscular injection of penicillin (total of 140,000,000 units), later supplemented by a three-weeks' course of streptomycin (0.5 gm. twice daily).

2231. CULLEN (C. H.) & SHARP (M. E.). **Infection of wounds with Actinomyces.**—*J. Bone Jt Surg.*, 33-B, 2, pp. 221–227, 3 figs. (1 col.), 1 graph, 1951.

Six cases of wound infection by *Actinomyces* are reported from the Emergency Medical Service Hospital, Winwick, Warrington, Lancashire, and the cultural characters of the isolates described and tabulated. In one case *A. bovis* [*A. israeli*] was diagnosed, in two other cases the organisms were also anaerobic, and in the remaining three an unusual aerobic form was implicated [Nos. 2056–2059]. Possible sources of infection are considered. Three patients were given prolonged treatment with potassium iodide, with little or no response, and chemotherapy by sulpha drugs in this group was also disappointing. Three were treated by X-ray therapy, with progressive improvement in two cases and none in the third.

2232. WEYERS (H.). **Beitrag zur Unterkieferaktinomykose im Kindesalter.** [Contribution to actinomycosis of the lower jaw in childhood.]—*Arch. Kinderheilk.*, 139, pp. 161–174, 2 figs., 1950.

This is a full report and discussion from the Children's Hospital, Hamburg, Germany, of a case of actinomycosis (*Actinomyces israeli*) of the lower jaw in a 12-year-old girl, who was cured by the administration of 200 gm. supronal, a sulphanilamide preparation.

2233. ZINNER (H.). **Aktinomykose der Zunge.** [Actinomycosis of the tongue.]—*Öst. Z. Stomatol.*, 47, pp. 241–245, 1950. [Abs. in *Zbl. Haut- u. Geschl. Krankh.*, 77, 4–5, p. 204, 1951.]

In Brodfeld's survey of 322 cases of actinomycosis, the jaw was involved in 58 per cent. but the tongue in only 0.3. In one of the author's two cases in Austria, a species of *Actinomyces* was demonstrated histologically in the hazel nut-sized protuberance excised from the back of the tongue, while in the other the greyish-yellow pus of a nodule of comparable dimensions on the edge of the tongue yielded Gram-positive hyphae with clavate terminal swellings and true branches, which disintegrated into granules. Penicillin at a dosage of 80,000 to 1,000,000 units daily for two to seven weeks, combined with X-ray and surgical treatment, offers the most hopeful prospect of a cure.

2234. ELO (R.), PÄTIÄLÄ (R.), & RITAMA (V.). **Pulmonary mycosis. Clinical and pathological features.**—*Ann. Med. intern. Fenn.*, 40, 2, pp. 99–116, 10 figs., 1951.

Three cases of pulmonary mycosis are reported from the Kivelä Hospital, Helsinki, Finland, two of the patients being males (a 42-year-old labourer and a 28-year-old carpenter) and one a 67-year-old female. The first case was acute, the second subacute, and the third chronic. The causal organism in the first two was *Actinomyces bovis* [? *A. israeli*]: and in the third (diagnosed only at autopsy) *Candida albicans*.

2235. KOHN (P. M.), TAGER (M.), SIEGEL (M. L.), & ASHE (ROSEMARY). **Aerobic Actinomyces septicemia. Report of a case.**—*New Engl. J. Med.*, 245, 17, pp. 640–644, 3 figs., 1951.

A case of actinomycotic septicaemia, with primary involvement of the lungs, in a 50-year-old male patient is reported from the Mt. Sinai Hospital, Cleveland, Ohio. The cultural and morphological characters of the organism isolated from the blood suggested its attribution to the genus *Streptomyces* as a hitherto undescribed species. A brief review of the relevant literature is presented, indicating the rarity of proved blood-stream infection by actinomycetes. The infection was apparently arrested by combined therapy with several antibiotics, including penicillin, aureomycin, and terramycin.

2236. LENTZE (F. A.). **Zur Aetiologie und spezifischen Diagnostik der Aktinomykose.** [Contribution to the etiology and specific diagnosis of actinomycosis.]—*Med. Klin.*, 45, 32, pp. 992–996, 1950.

The etiology and specific diagnosis of actinomycosis are discussed in the light of information presented in the relevant literature and of the author's analysis at the Hygienic Institute of the University, Erlangen, Germany, of material from 252 cases of the disease. Isolated cases of pulmonary actinomycosis may be of exogenous origin, but in general the illness results from endogenous infection by *Actinomyces israeli*, a regular concomitant of the anaerobic microbial flora of the normal oral cavity, and simply represents a particular form of the 'foetid' inflammatory processes associated therewith.

Diagnosis by means of pure cultures of the organism is technically practicable but presupposes considerable experience. The serological method and intracutaneous reactions are regarded as unreliable for the demonstration of *A. israeli*, but 12 cases of cervico-facial actinomycosis [cf. next entry] were diagnosed by means of subcutaneous injections with *Actinomyces* antigen (Behringwerk, Marburg), which provokes specific allergy of the inflammatory tissue.

2237. LORENZ (O.). **Zur praktischen Diagnostik und Therapie der cervico-facialen Aktinomykose.** [Contribution to the practical diagnosis and therapy of cervico-facial actinomycosis.]—*Med. Klin.*, 45, 32, pp. 996–998, 1951.

The diagnosis of cervico-facial actinomycosis [*Actinomyces israeli*] is frequently complicated by the non-specificity of the clinical symptoms, but in 22 cases of stomatogenous origin at the Medical Academy, Düsseldorf, it was effected at an early stage, pending cultural identification, by injection with *Actinomyces* antigen [cf. preceding entry]. The beneficial effect of the antigen on all the patients was enhanced by combination with surgical procedures, potassium iodide, X-rays, and penicillin.

2238. MASSON (A. M.). **Report on a fatal case of nocardiosis.**—Abs. in *Canad. J. publ. Hlth*, 42, 2, p. 72, 1951.

A ten-year-old boy, ailing from infancy, was admitted to the Royal Victoria Hospital, Montreal, for a subacute bronchopneumonia of unknown etiology.

While on a course of ACTH [adrenocorticotrophin] combined with antibiotic therapy he developed symptoms of empyema. *Nocardia asteroides* was isolated from the pus of a lung abscess during life and from lesions of the liver, spleen, lung, and a mesenteric lymph node at autopsy.

2239. FRIEDL (MARTHA). **Zur Behandlung der Bauchaktinomykose. Kasuistischer Beitrag.** [A casuistic contribution to the treatment of abdominal actinomycosis.]—*Schweiz. med. Wschr.*, 82, 9, pp. 226–228, 1952.

Following a brief survey of previous references to abdominal actinomycosis (*Actinomyces* sp.), the author presents a full report on a case in a 28-year-old female at Zürich, Switzerland, who responded favourably to surgical intervention combined with X-ray (total of 6,000 r.) and antibiotic therapy (17,800,000 units penicillin, 21 gm. diazil, and 100 gm. elkosin [No. 1077]).

2240. MIRAND (R. N.) & TRAMUJAS (A.). **Aktinomykose. 2. Fall in Paraná.** [Actinomycosis. Second case in Paraná.]—*An. brasil. Derm.*, 24, pp. 283–287, 1949. [Portuguese. Abs. in *Zbl. Haut-u. GeschlKrankh.*, 77, 4–5, p. 205, 1951.]

The second case of actinomycosis is reported from the State of Paraná, Brazil, involving the right knee joint and adjacent portion of the tibia in a 26-year-old negro. The pus of the mycetoma harboured yellowish-white granules, tentatively referred to *Actinomyces brasiliensis*. Cultures were negative, but histological examination revealed actinomycotic granules with a basophilic centre and eosinophilic clubs. An improvement was effected by treatment with iodide, sulphonamides, and X-rays.

2241. MOGABGAB (W. J.) & FLOYD (J. L.). **Acid-fast *Nocardia* causing an erroneous diagnosis of tracheobronchial tuberculosis.**—*N.O. med. surg. J.*, 104, 1, pp. 28–31, 1951.

Nocardia asteroides was isolated from the sputum of a 31-year-old female at New Orleans suffering from an illness which had been incorrectly diagnosed as tracheobronchial tuberculosis and was subsequently considered to be a chronic bronchitis of unknown origin with recurrent respiratory infections. The fungus did not appear to be directly concerned in its etiology.

2242. O'TOOLE (E. K.). **A report of the cultivation of *Nocardia tenuis* isolated from three cases of trichomycosis axillaris flava.**—*Amer. J. med. Technol.*, 17, 1, pp. 1–7, 4 figs., 1951. [Abs. in *Dermatol. & Venereol. (Excerpt. med., Sect. XIII)*, 5, 9, pp. 393–394, 1951.]

At the University of Colorado Medical Center, Denver, three strains of *Nocardia tenuis* [No. 1576] were isolated on blood agar from concretions surrounding the axillary hair shafts in three patients with the yellow type of trichomycosis axillaris, all of whom had served in the tropics. Some of the Gram-negative, slender rods were parallel in arrangement, while others were long, sparsely branched hyphae with thickened portions; a few clavate forms were also observed. Blood appeared to be essential for the growth of the fungus. Negative results were obtained in inoculation experiments on mice and guinea-pigs.

2243. ENGEL (A.). **Haverhill fever (in connection with a case observed in Sweden).**—*Acta med. scand.*, 132, pp. 562–571, 1948. [V.B., 21, No. 978.]

This is a general account of *Actinomyces muris-ratti* infection, which occurs in rats in Sweden.

2244. GORET (P.) & JOUBERT (L.). **Contribution à l'étude de l'actinomycose du Chien.** [A contribution to the study of actinomycosis of the Dog.]—*Rev. Méd. vét., Lyon et Toulouse*, 100, pp. 561–568, 1949. [V.B., 21, No. 675.]

A description is given of an organism, considered to belong to the Actino-

mycetaceae, isolated from a dog [No. 2083] with lesions in the liver, spleen, epicardium, kidneys, tracheo-bronchial lymph nodes, and lateral ventricles, the macroscopic features of the disease resembling those of canine tuberculosis. On solid media two types of colony developed, one small, flat, white, and radially striated, and the other large, yellowish, spongy, and extending deeply and irregularly into the underlying medium. Both were grown separately in serial culture and are considered to represent dissociation of the organism.

2245. OLNEY (J. F.). **Actinomycosis—a new disease of Turkeys.**—*Vet. Med.*, 45, pp. 392–394, 1950. [*V.B.*, 21, No. 977.]

In June, 1949, a hitherto unrecorded disease occurred in a flock of 9,000 six-week-old turkey poults. Infection was confined to birds brought in as day-old poults until they were put on range with the remaining locally hatched poults at about eight weeks of age. Mortality throughout the season was about 45 per cent., and when the birds were marketed in December, over 10 per cent. showed lesions. In the early stages the faeces were thin and white; birds that survived longer became weak, and a week or so before death had yellowish diarrhoea. Lesions were present in the liver and in most cases in the caeca. Occasionally they occurred in the leg, on the ribs, or in the upper alimentary tract. In the liver, early lesions appeared as pin-point spots, which developed into hard, round, yellowish-white nodules. In the caeca ulceration of the mucosa was observed, and caseous plugs were noted in the lumina. In birds which survived early infection nodules protruded from the caecal serosa. Smears from nodules showed the presence of club-shaped organisms and filaments, identified as *Actinomyces*.

2246. WILZ (P.). **Beitrag zur Behandlung der Aktinomykose beim Rind mit Katusan-Jodkalitherapie.** [A contribution to the treatment of bovine actinomycosis with katusan-potassium iodide therapy.]—*Tierärztl. Wschr.*, 5, 21–22, p. 426, 1951.

In his practice in northern Württemberg, Germany, during the last four years, the writer has successfully treated 60 cases of bovine actinomycosis [*Actinomyces bovis*], involving the tongue, jaw, throat, and parotid gland, by means of two injections of katusan at four times the prescribed strength, with a four-day interval between the first and second, supplemented by a ten-day course of potassium iodide *per os* (5 gm. daily).

2247. GRIFFITH (B. T.). **Mycological studies in the Savannah area—1950.**—*J. Allergy*, 22, 5, pp. 461–465, 2 graphs, 1951.

The fungi recognized as agents of allergic symptoms were found to occur in the Savannah area of Georgia throughout the year 1950. Predominant genera included *Aspergillus*, *Alternaria*, *Hormodendrum*, and *Helminthosporium*, besides unspecified smuts and rusts. Fungal concentration reached a peak during the period from April to the end of November. Climatic conditions were apparently not the sole factor concerned in the seasonal fluctuation of the organisms.

2248. D'ESHOUGUES (J. R.), ZAFFRAN (A.), & COHEN-ADAD (Mme F.). **Mycose pulmonaire aiguë à 'Aspergillus brodeni'.** [Acute pulmonary mycosis due to *Aspergillus brodeni*.]—*Bull. Soc. méd. Hôp. Paris*, Sér. 4, 67, 25–26, pp. 1122–1128, 7 figs., 1951.

The fungus responsible for an acute pulmonary infection in a 43-year-old male native of Algiers was identified as *Aspergillus brodeni*, a species related to, but distinct from, *A. fumigatus*, the habitual agent of aspergillosis in man.

The course of the illness took a favourable turn even before the institution of routine treatment with penicillin, and by the end of a month the clinical respiratory syndrome had disappeared.

2249. MONOD (O.), PESLE (G.), & SEGRETAIN (G.). **Sur une forme nouvelle d'aspergillose pulmonaire : l'aspergillome bronchectasiant.** [On a new form of pulmonary aspergillosis: bronchiectatic aspergilloma.]—*Bull. Acad. nat. Méd., Paris*, Sér. 3, 135, 29–30, pp. 508–511, 1951.

The authors' study on a new form of pulmonary aspergillosis in France, for which the name of bronchiectatic aspergilloma is proposed, is based on nine cases, comprising three of their own, four in the relevant literature, and two unpublished of Prof. Orié. *Aspergillus fumigatus* was identified as the causal organism in four and an undetermined *A. sp.* in two cases.

2250. CASH (R. L.). **Cutaneous blastomycosis.**—*J. Kentucky med. Ass.*, 49, 3, pp. 110–116, 2 figs., 1951. [Abs. in *Dermatol. & Venereol. (Excerpt. med., Sect. XIII)*, 5, 10, p. 458, 1951.]

Over a ten-year period fungous diseases were responsible for 38 deaths in Kentucky, of which six were attributable to blastomycosis [*Blastomyces dermatitidis*]. The cutaneous form of the disease persists for years and will usually respond to a combination of iodides, roentgen ray and vaccine therapy, and rational surgical procedures. The diagnostic value of the wet smear from the discharges of any chronic lesion is emphasized. The systemic form is fatal in 90 per cent. of the cases within three years of the onset of symptoms.

2251. SCHWARZ (J.) & BAUM (G. L.). **Blastomycosis.**—*Amer. J. clin. Path.*, 21, 11, pp. 999–1029, 20 figs., 1951.

The evidence presented in this paper for the predominance of primary pulmonary infection in blastomycosis (*Blastomyces dermatitidis*) is based on 22 cases observed at the General Hospital, Cincinnati, Ohio, during the last eight years and 36 from the files of the Armed Forces Institute of Pathology in Washington, supplemented by a study of 84 contributions to the relevant literature.

2252. RAMSEY (F. K.) & CARTER (G. R.). **Canine blastomycosis in the United States.**—*J. Amer. Vet. med. Ass.*, 120, 899, pp. 93–98, 3 figs., 1952.

This is a summary of the available information and a review of the literature on canine blastomycosis (*Blastomyces dermatitidis*) [Nos. 29, 698, 1623], of which at least 16 cases, all ending fatally, have been reported in the United States. The granulomatous, frequently suppurating processes characteristic of the disease are most commonly observed in the lungs and skin.

2253. CARTON (C. A.) & MOUNT (L. A.). **Neurosurgical aspects of cryptococcosis.**—*J. Neurosurg.*, 8, 2, pp. 143–156, 2 figs., 1951.

Two cases of cryptococcosis (*Cryptococcus neoformans*) are reported from the Neurological Institute, Presbyterian Hospital, New York, both in females, aged 12 and 56. Information is presented on the causal organism, the geographical distribution and incidence of the disease, and the resultant mortality, methods of diagnosis, and the pathology of the nervous system, concluding with a review of the literature on 42 cases involving neurosurgical procedures and some suggestions for establishing diagnosis.

2254. DROUHET (E.) & SEGRETAIN (G.). **Inhibition de la migration leucocytaire in vitro par un polyoside capsulaire de Torulopsis (*Cryptococcus*) neoformans.** [Inhibition of leucocytic migration *in vitro* by a capsular polyoxide of *Torulopsis* (*Cryptococcus*) *neoformans*.]—*Ann. Inst. Pasteur*, 81, 6, pp. 674–676, 1951.

After an hour's incubation at 39° C., the migration on starch grains of the

leucocytes from an inflammatory peritoneal exudate of a guinea-pig was inhibited by heavy aqueous suspensions of heavily and lightly encapsulated (mucous and smooth) cultures of *Cryptococcus neoformans* [Nos. 1366, 1638] at dilutions of 1 in 50 and 1 in 5, respectively. After washing in water neither type of culture prevented leucocytic movement.

2255. NEILL (J. M.), SUGG (J. Y.), & MCCAULEY (D. W.). **Serologically reactive material in spinal fluid, blood, and urine from a human case of cryptococcosis (torulosis).**—*Proc. Soc. exp. Biol., N.Y.*, 77, 4, pp. 775-777, 1951.

Serologically reactive substances ('soluble antigens'), readily detectable by precipitation and complement-fixation with *Cryptococcus [neoformans]* antiserum, were found in the spinal fluid, blood serum, and urine of a patient suffering from cryptococcal meningitis at the Leslie-McCauley Clinic, Okmulgee, Oklahoma. Absorption of the antiserum with solutions of purified polysaccharide of the fungus removed its capacity to react with the patient's fluids. The reactive substances in these fluids were relatively thermostable and probably represent capsular polysaccharides of *C. neoformans* [No. 1872]. Serological reactions of the 'Quellung' type were obtained with the capsules of fungal cells from the centrifuged sediment of the spinal fluid.

2256. WILSON (H. M.) & DURYEA (A. W.). ***Cryptococcus meningitis (torulosis) treated with a new antibiotic, actidione.***—*Arch. Neurol. Psychiat.*, 66, 4, pp. 470-480, 4 figs., 1951.

From the Veterans Administration Hospital, Alexandria, Louisiana, the authors report the successful treatment with actidione of a case of meningo-encephalitis (*Cryptococcus neoformans*) in a 39-year-old paper-mill worker. The patient was asymptomatic, with sterile spinal fluid cultures, 20 months after the diagnosis of the disease was established. Another case, ineffectually treated earlier by conventional methods, is also reported with autopsy findings.

In *in vitro* experiments, the growth of *C. neoformans* was inhibited by actidione at 0.05 mg. per ml., aureomycin at 5 γ , and methylrosaniline chloride at 1 in 200,000. Penicillin and sulphadiazine were less effective, while chloramphenicol and alkalization to pH 8.4, recently reported as beneficial [No. 1634], failed to suppress the development of the fungus.

2257. VORONOV (D. L.). **Seasonal spread and modes of infection in epizootic lymphangitis.**—*Veterinariya, Moscow*, 26, 9, pp. 23-25, 1949. [*V.B.*, 21, No. 976.]

The author puts forward the view that biting flies spread epizootic lymphangitis [*Histoplasma farciminosum*: Nos. 1058, 2216]. The disease occurs chiefly in autumn and winter, the incubation period is three months, and infection occurs in horses that have not been in contact, even indirectly, with infected horses. Inoculation tests confirming these statements are described. The causal organism was found in the alimentary canal of flies that had settled on open skin lesions of infected horses. From spring to autumn infected horses should be isolated in darkened stables, buildings sprayed with DDT, and lesions covered with gauze sprinkled with DDT.

2258. BOGLIOLO (L.). **Contribuição ao conhecimento da patogênese da doença de Lutz.** [A contribution to the knowledge of the pathogenesis of Lutz's disease.]—*Brasil méd.*, 63, 1-3, pp. 11-13, 1949. [*B.A.*, 25, No. 28472.]

The observations on the frequency of infection by *Paracoccidioides brasiliensis* following dental extraction reported in this paper have already been noticed from another source [No. 1644].

2259. NEVES (J. A.) & BOGLIOLO (L.). **Researches on the etiological agents of the American blastomycosis. I. Morphology and systematic of the Lutz's disease agent.**—*Mycopathologia*, 5, 2-3, pp. 133-146, 4 pl., 15 figs., 1951.

On the basis of extensive morphological studies on the causal organism of Lutz's disease (South American blastomycosis), supplemented by a perusal of the relevant literature, the writers conclude that it should be referred to the genus *Aleurisma* as *A. brasiliensis*, discarding *Paracoccidioides brasiliensis* and 17 other synonyms. Maize meal agar was found to be an indispensable medium for the differentiation of the pathogen from other fungi causing comparable syndromes.

2260. TORRES (C. M.), DUARTE (E.), GUIMÃRES (J. P.), & MOREIRA (L. F.). **Destructive lesion of the adrenal gland in South American blastomycosis (Lutz' disease).**—*Amer. J. Path.*, 28, 1, pp. 145-155, 2 pl., 1952.

Necropsy reports are presented from the Instituto Oswaldo Cruz, Rio de Janeiro, Brazil, on two cases, in males 58 and 49 years old, of South American blastomycosis (*Paracoccidioides brasiliensis*) characterized by extensive destructive lesions of the adrenal gland, embolism of the small blood-vessels by large fungus cells, giant cells derived from the vascular endothelium with many organisms, and endovasculitis.

The caseation necrosis, responsible for considerable loss of glandular tissue, is apparently a consequence of local ischaemia resulting from embolism by large organisms with endovasculitis of the small blood-vessels and the associated granulomata.

2261. NEGRONI (P.), GATTI (J. C.), CARDAMA (J. E.), & BALIÑA (I. M.). **La blastomycosis sudamericana en la Argentina. A propósito de una observación.** [South American blastomycosis in Argentina. In connexion with an observation.]—*Rev. argent. Dermatosis*, 35, 44, pp. 220-229, 4 figs., 1951.

A further case of South American blastomycosis (*Paracoccidioides brasiliensis*) in Argentina [No. 1876] is presented, involving the buccal cavity of a 60-year-old Bulgarian male, resident for 22 years in the province of Chaco. Of 30 cases of the disease previously recorded in the country, 17 originated in Chaco, six in Misiones, two each in Tucumán, Corrientes, and Santiago del Estero, and one in Formosa. The authors maintain their opinion that the incubation period of the disease is a lengthy one, and that apparently autochthonous cases in other regions of Argentina actually contracted infection in zones where it is endemic.

2262. NAUCK (E. G.). **Zur Histologie der Chromoblastomycose (Chromomycose).** [A contribution to the histology of chromoblastomycosis (chromomycosis).]—*Gaz. méd. portug.*, 4, 3, pp. 809-816, 6 figs., 1951. [English and Portuguese summaries.]

The pathogenesis, clinical symptomatology, and diagnosis of chromoblastomycosis (*Fonsecaea* [*Phialophora*] *pedrosoi*, *P. verrucosa*, and *Hormodendrum* spp.) are discussed on the basis of comparative histological studies at the Tropical Institute, Hamburg, on material from Costa Rica. The tissue reactions did not afford any clue as to the particular species involved in a given case. Differences in the histological aspect of the specimens arose from the duration and stage of development of the lesions, which are confined to the superficial skin layers. Diagnosis rests on the typical features of the tissue reactions and the detection of parasitic forms of the responsible fungi.

2263. YEW (C. C.). **Chromoblastomycosis: preliminary report of a case observed in China.**—*Chin. med. J.*, 69, 11-12, pp. 476-480, 5 figs., 1951.

A case of chromoblastomycosis, believed to be the first record for China,

is reported from the Cheeloo University Hospital, Tsinan, Shantung. The left leg and foot of the patient, a 32-year-old farmer, were covered with cauliflower-shaped tumours. The fungus isolated from the lesions on Sabouraud's and honey agar is tentatively referred to *Hormodendrum-Acrotheca*. Therapy consisted of 10 per cent. sodium iodide, administered orally and intravenously, daily soaking in 0.25 per cent. copper sulphate solution, and local application of an ointment composed of 7 per cent. chrysarobin, 5 per cent. acid salicylate, and 5 per cent. phenol, which effected a marked improvement in the course of 17 days.

- 2263a. COHEN (R.). **Four new fungicides for *Coccidioides immitis*. 1. Sodium caprylate. 2. Ethyl vanillate. 3. Fradycin. 4. Thiolutin.**—*Arch. Pediat.*, 68, 6, pp. 259–264, 3 figs., 1951.

Particulars are given of *in vitro* studies at the Kern General Hospital, Bakersfield, California, demonstrating the fungicidal action on *Coccidioides immitis* of sodium caprylate [No. 1861], ethyl vanillate [No. 2142], fradycin [Nos. 1820, 1878], and thiolutin, a golden-yellow, flocculent, substance soluble with difficulty except in glycerin. *In vivo* trials with the two first-named are in progress.

2264. JENKINS (V. E.) & POSTLEWAITE (J. C.). ***Coccidioidal meningitis: report of four cases with necropsy findings in three cases.***—*Ann. intern. Med.*, 35, 5, pp. 1068–1084, 6 figs., 1951.

Four cases of coccidioidal meningitis (*Coccidioides immitis*) are reported from the Veterans Administration Hospital, McKinney, Texas, with necropsy findings in three. One patient showed a delayed but remarkable clinical response to the intravenous administration of actidione [No. 2256 and next entry] and was still alive three years after the disease was first diagnosed, while another survived 5½ years after the development of infection.

2265. GEORG (LUCILLE K.), AJELLO (L.), & GORDON (M. A.). **A selective medium for the isolation of *Coccidioides immitis*.**—*Science*, 114, 2963, pp. 387–389, 2 figs., 1951.

At the Communicable Disease Center, Atlanta, Georgia, when three strains of *Coccidioides immitis* and 15 strains of common saprophytic fungi comprising 12 genera were cultured on Sabouraud's dextrose agar plus penicillin (20 units per ml.) and streptomycin (40 units per ml.), with actidione [see preceding entry] added at rates of 0.1, 0.5, and 1 mg. per ml., colonies of *C. immitis* were readily identifiable by the fifth day. Attempts were made to isolate *C. immitis* in culture from a mixture of its spores with those of the saprophytes. On a basis of the volume of packed spores used there were approximately 2,000 times as many spores of saprophytes as of *C. immitis* in the mixture. After three days' incubation, plates containing no actidione were covered with a heavy growth of the saprophytes and no colonies of *C. immitis* were detectable. On the first of a series of plates containing 0.1 mg. actidione per ml. *C. immitis* colonies were recognizable but overgrown with saprophytes, whereas on the remainder saprophytic growth was negligible. On a series containing 0.5 mg. actidione per ml. saprophytic growth was still further restricted and even after 12 days the plates contained *C. immitis* in almost pure culture. Exposed outdoors for one to six hours, plates containing 0.1 mg. actidione per ml. showed after six days only a very few restricted colonies of saprophytes, whereas the controls with no actidione were covered with them.

2266. MEAD (C. I.). ***Coccidioidomycosis in children.***—*J. Amer. med. Ass.*, 146, 2, pp. 85–87, 1951.

Recent contributions to the literature on coccidioidomycosis (*Coccidioides*

immitis) in children in the United States are briefly surveyed under the headings of tests for coccidioidomycosis, complications, and prognosis and treatment.

2267. SMITH (C. E.). **Diagnosis of pulmonary coccidioidal infections.**—*Calif. Med.*, 75, 6, pp. 385–391, 2 graphs, 1 map, 1951.

A bibliography of 40 titles forms the basis of this useful guide to the diagnosis of pulmonary coccidioidosis (*Coccidioides [immitis]*) by various procedures, under the headings of clinical spectrum, residence history, endemic areas in California, essential laboratory proof (comprising the coccidioidin skin test, serological tests, culture: isolation of the fungus, and haematological studies), and roentgenograms.

2268. ARBLASTER (P. G.). **Pulmonary histoplasmosis.**—*Thorax*, 5, 4, pp. 333–339, 3 figs., 1950.

A case of pulmonary histoplasmosis (*Histoplasma capsulatum*) in a 36-year-old male patient is reported from University College Hospital, London. Infection was probably contracted in Canada [Nos. 1401–1403]. The case, apparently the third to be reported in England [No. 423 and cf. next entry], is unusual because the presenting symptom was haemoptysis and the period of observation extended over 10 years.

2269. CROFTON (J.). **A probable case of pulmonary histoplasmosis diagnosed in England.**—*Thorax*, 5, 4, pp. 340–342, 2 figs., 1950.

Pulmonary histoplasmosis [*Histoplasma capsulatum*] is regarded as the most likely diagnosis in the case of a 43-year-old male patient at the Brompton Hospital, London, with an unusual form of pulmonary calcification, positive reactions to the histoplasmin skin test, and a history of three years' residence in Canada 30 years previously [cf. preceding entry]. These findings are of purely academic interest, since the disease is almost certainly healed and the current symptoms are those of a mild chronic bronchitis.

Since the submission for publication of the case reported above, the author encountered a similar one in a 41-year-old male patient at Hammersmith Hospital, London, who also presented an unusual form of pulmonary calcification, reacted positively to histoplasmin, and had travelled extensively in the southern and central United States from 1929 to 1938.

2270. MURRAY (J. F.) & BRANDT (F. A.). **Histoplasmosis and malignant lymphoma.**—*Amer. J. Path.*, 27, 5, pp. 783–799, 2 pl., 1951.

Three further cases of histoplasmosis (*Histoplasma capsulatum*), all in males, aged 59, 64, and 13 years, are reported from the South African Institute for Medical Research, Johannesburg, bringing the total for the continent of Africa to six [Nos. 6, 1158]. The third case was both histologically and clinically reminiscent of a malignant reticulosis [cf. No. 1922] and was so diagnosed on biopsy of a lymph gland, but a subsequent review of the same section disclosed the pathogen.

2271. CHRISTIE (A.). **Histoplasmosis and pulmonary calcification—geographic distribution.**—*Amer. J. trop. Med.*, 31, 6, pp. 742–752, 8 maps, 1951.

In this paper, presented at the Sixth International Congress of Pediatrics, Zürich, in July, 1950, the author reviews outstanding recent contributions to the literature and a number of personal communications on the connexion between histoplasmosis (*Histoplasma capsulatum*) and pulmonary calcification in relation to geographical distribution.

2272. FAWELL (W. N.), BROWNS (H. L.), & ERNSTENE (A. C.). **Vegetative endocarditis due to *Histoplasma capsulatum*. Report of a case.**—*Cleveland Clin. Quart.*, 18, 4, pp. 305–308, 2 figs., 1951.

A case of vegetative endocarditis caused by *Histoplasma capsulatum* is reported from the Cleveland (Ohio) Clinic in a 55 year-old female patient who was suffering from chronic rheumatic heart disease with mitral stenosis and insufficiency. The possibility of an infection of this type should be considered whenever a case of presumed subacute bacterial endocarditis fails to yield positive blood cultures or to respond to antibiotic therapy.

2273. DERIFIELD (R. S.) & COLE (R. L.). **Skin sensitivity to histoplasmin in Iowa.**—*J. Iowa med. Soc.*, 41, 1, pp. 16–18, 1 graph, 1951.

At the Veterans Administration Hospital, Des Moines, Iowa, 479 white male patients were tested for sensitivity to histoplasmin (*Histoplasma capsulatum* antigen). The condition was found to be present in 39 per cent. of the 79 persons comprising the youngest (20 to 29) age group, and thereafter the proportion gradually increased to reach a plateau of 61 to 63 per cent. in fifth to the seventh decades, inclusively, represented, respectively, by 51, 194, and 60 patients, falling again to 45 per cent. in the 20 persons of 70 years old and upwards. Sensitivity to tuberculin was recorded in 19 per cent. of the 20 to 29 age group, after which there was a rapid rise to 61 per cent. in the fifth decade, followed by a slow decline to 50 per cent. in the 70 and over group. In the southern half of the State 68 per cent. of the patients reacted positively to histoplasmin and in the northern 38 per cent., the corresponding figures for tuberculin being 43 and 48 per cent., respectively.

2274. MURPHY (R. J.), PECK (W. N.), & VINCENT (BLANCHE). **Preliminary report of histoplasmin and other antigen sensitivity in North Carolina.**—*Amer. J. publ. Hlth*, 41, 12, pp. 1521–1525, 2 graphs, 1 map, 1951.

In a recent survey of histoplasmin sensitivity in North Carolina, 5 per cent. of 925 sanatorium patients from 97 counties reacted positively, a higher proportion than was revealed by previous studies [No. 736]. Regional differences in sensitivity were marked, the number of positive reactors ranging from 0.9 per cent. in the north-central section to 15 per cent. in the north-east. In more extensive studies in the latter area, 75 per cent. of 147 patients with pulmonary calcification reacted to histoplasmin in Beaufort County [Nos. 743, 744], while 43 per cent. of 338 persons chosen at random in Hyde County responded positively.

2275. MILLER (I. R.) & GROSSMAN (S.). **Benign histoplasmosis in siblings : report of cases.**—*J. Amer. med. Ass.*, 147, 8, pp. 753–755, 3 figs., 1951.

From the Bureau of Tuberculosis, New York City Department of Health, the authors report two cases of benign histoplasmosis [*Histoplasma capsulatum*] in negro brothers, aged six and three years. The X-rays revealed pulmonary infiltrations and calcified nodules in the older boy and a mediastinal density in the younger [No. 1163]. Skin reactions were positive to histoplasmin (1 in 1,000) and negative to tuberculin.

2276. LYNCH (J. F.) & ALPERN (E. B.). **Results of histoplasmin skin testing in children from the St. Louis, Mo., area.**—*J. Pediat.*, 38, 1, pp. 51–54, 1 graph, 1951.

Between November, 1946, and May, 1947, histoplasmin skin tests were performed in the St. Louis, Missouri, area on 500 children from a few days to 15 years of age, of whom 73 (14.6 per cent.) reacted positively. The incidence

of positive responses increased rapidly with age up to 10 years; only five (1.9 per cent.) of the 262 under three were histoplasmin-positive. In a more detailed study on 182 males and 128 females within the group of 500, 31 (17.1 per cent.) of the former and 12 (9.3) of the latter reacted positively. The skin reactions of three of the 25 negroes tested (12 per cent.) were positive. Of the 43 positive reactors, 30 (69.7 per cent.) came from rural or semi-rural districts. There was a high incidence of chronic disease (31 out of 43 or 72.1 per cent.). Of the 18 histoplasmin-positive patients for whom chest X-rays were available, nine showed calcification of the tracheobronchial lymph nodes and five peritracheal and hilar lymph adenopathy.

2277. NIÑO (F. L.), REY (J. C.), & LANGE (W.). **Histoplasmosis : nueva observación argentina.** [Histoplasmosis: a new Argentine observation.]—*Rev. Asoc. méd. argent.*, 64, 689–690, pp. 537–541, 6 figs., 1950. [English summary.]

The tenth case of histoplasmosis (*Histoplasma capsulatum*) in Argentina [No. 1396] involved a 50-year-old male textile-worker from Yugoslavia resident in Buenos Aires since 1929. Symptoms included ulcers of the buccal mucous membrane, cervical adenopathy, and pulmonary lesions. A cure was effected by means of sulphadiazine (total of 208 gm.).

2278. NIÑO (F. L.). **Nueva observación de histoplasmosis en la República Argentina.** [A new observation on histoplasmosis in the Argentine Republic.]—*Mycopathologia*, 5, 2–3, pp. 128–132, 2 pl., 1951. [English summary.]

From the Institute of Clinical Surgery, Buenos Aires, the author reports the seventh Argentine case of histoplasmosis (*Histoplasma capsulatum*) [see preceding entry], which occurred in a 59-year-old male patient with concurrent pulmonary tuberculosis. The lesions in the mouth and lymph nodes caused by the fungus were cured by sulphadiazine.

2279. TUCKER (H. A.). **Histoplasmin sensitivity in the Panama Zone : a correlated clinicopathological study of one thousand patients, with speculations as to the present status of *Histoplasma capsulatum* on the Isthmus of Panama.**—*Arch. Derm. Syph.*, Chicago, 64, 6, pp. 713–726, 1 fig., 1 graph, 1951.

The amplified data presented in this continuation of the author's study on histoplasmin sensitivity in the Panama Canal Zone do not essentially modify the results of the preliminary tests on 500 indigenous patients [No. 1923]. An analysis of the series of 1,000 demonstrated that some 40 per cent. of the subjects reacted positively to histoplasmin, 60 per cent. to tuberculin, and less than 1 per cent. to coccidioidin. In none of these cases was *Histoplasma capsulatum* identified, but it is stated in a footnote that the fungus was determined morphologically, after the completion of this investigation, from a lymph node smear made at the autopsy on a four-month-old infant, and that cultural and animal inoculation tests are in progress.

2280. DRAHEIM (J. H.), MITCHELL (J. R.), & ELTON (N. W.). **Histoplasmosis : fourth case report from the Canal Zone.**—*Amer. J. trop. Med.*, 31, 6, pp. 753–760, 4 figs., 1951.

The fourth case of histoplasmosis (*Histoplasma capsulatum*) and the first for 45 years is reported from the Isthmus of Panama in a coloured male infant, three months old, at the Gorgas Hospital, Ancon. The patient is believed to have been the youngest on record. The causal organism was diagnosed at autopsy. Attempts at culture were unsuccessful, but the pathology was characteristic. The case is important as the first of unquestionably endemic origin.

2281. GRAYSTON (J. T.), LOOSLI (C. G.), & ALEXANDER (E. R.). **The isolation of *Histoplasma capsulatum* from soil in an unused silo.**—*Science*, 114, 2961, pp. 323–324, 1951.

A farmer aged 53 and his two sons aged 20 and 5, respectively, living in Indiana, were attacked by *Histoplasma capsulatum*, which was present in specimens of the sputa and also in a bone marrow culture.

During the two to three weeks preceding their illness the two men in addition to their usual work had cleaned out a silo unused for some years, while the child sat in the truck into which the dust was shovelled. On 27th November, 1950, 70 samples of soil from about the farm buildings, yard sand, ground feed, and material from the silo were collected, pooled into 15 groups, and examined. The homogenized liver and spleens of mice inoculated with two groups from the silo yielded *H. capsulatum* on culture on three media.

On 26th March, 1951, a second survey was made, and two groups from the silo again yielded *H. capsulatum*. Four additional monthly surveys were made and of a total of 106 soil samples from the silo 26 yielded *H. capsulatum*.

2282. MENGES (R. W.). **The histoplasmin skin test in animals.**—*J. Amer. vet. med. Ass.*, 119, 892, pp. 69–71, 4 figs., 1951.

The mode of application of the histoplasmin skin test and the reactions observed in the horse, cow, sheep, and chicken are described.

2283. MENGES (R. W.). **Canine histoplasmosis.**—*J. Amer. vet. med. Ass.*, 119, 897, pp. 411–415, 1 map, 1951.

A description is given of canine histoplasmosis (*Histoplasma capsulatum*), based on 42 cases, mostly from the east-central region of the United States. Symptoms commonly observed in the fatal cases included gradual loss of weight, persistent diarrhoea, enlarged abdomen, ascites, chronic cough, and a high temperature or intermittent fever. The epizootiology of the disease is discussed and outbreaks are described. Diagnosis, prognosis, prevention, and treatment are considered. The demonstration of the fungus in tissues or by cultures is essential for a definite diagnosis.

2284. ROBINSON (J. W.) & KOTCHER (E.). **Histoplasmosis survey of Dogs in Louisville, Kentucky.**—*Publ. Hlth Rep., Wash.*, 66, 47, pp. 1533–1537, 1951.

None of the stained bone marrow smears and splenic impressions from 303 dogs collected in the Louisville area of Kentucky between March, 1950 and January, 1951 yielded *Histoplasma capsulatum*. Cultures from the material on a modified Sabouraud's agar slant were also negative for the fungus after a month's incubation at room temperature.

2285. ROBINSON (V. B.), McVICKAR (D. L.), & PETERSON (J. C.). **Some aspects of the epizootiology of histoplasmosis in two Boxer breeding kennels.**—*J. Amer. vet. med. Ass.*, 119, 894, pp. 195, 200, 2 diagrs., 1951.

Following a survey of the relevant literature the authors present a report and discussion on outbreaks of histoplasmosis (*Histoplasma capsulatum*) in two boxer breeding kennels at Nashville, Tennessee, during the last four years, involving the death of at least 18 dogs [Nos. 1694–1698], of which 13 were under a year old.

2286. RANDALL (C. C.), ORR (MARY F.), & SCHELL (F. G.). **Detection by tissue culture of an organism resembling *Histoplasma capsulatum* in an apparently healthy Horse.**—*Proc. Soc. exp. Biol., N.Y.*, 78, 2, pp. 447–450, 1 fig., 1951.

At the Vanderbilt University School of Medicine, Nashville, Tennessee, intracellular organisms resembling *Histoplasma capsulatum* were detected in

apparently normal amnio-allantoic membrane and adult horse spleen maintained in tissue culture. The observation is of interest because the method is unique from the diagnostic standpoint; on account of the rarity of equine histoplasmosis, of which only one case report was found in the relevant literature (*N. Amer. Vet.*, 29, p. 710, 1948); and in relation to epizootic lymphangitis (*Cryptococcus farciminosus*) [*Histoplasma farciminosum*: Nos. 1954, 2257].

2287. TUCKER (H. A.), MATHENEY (R. G.), & PORTER (D. B.). **Histoplasmin sensitivity among Cattle in Panama: report of 691 negative tests.**—*Amer. J. trop. Med.*, 31, 6, pp. 761–765, 1 map, 1951.

No reactors to histoplasmin, in dilutions as low as 1:5, were encountered in 1950–1 among 691 dairy cattle drawn from widely separated areas of the Republic of Panama. The absence of any correlation between bovine and human sensitivities suggests that the sensitization of cattle and man proceeds from different extraneous sources. Locally, at any rate, cattle evidently do not constitute an important animal reservoir for *Histoplasma capsulatum* [No. 2280].

2288. BENDOVE (R. A.) & ASHE (B. I.). **Geotrichum septicemia.**—*Arch. intern. Med.*, 89, 1, pp. 107–109, 1952.

From New York University-Bellevue Medical Center the authors report a case of septicemia due to *Geotrichum* sp. in a 79-year-old male diabetic patient, who responded favourably to the administration of neomycin sulphate over a 12-day period (1,000 units per kg. of body weight for the first three days and 500 thereafter). At the time of writing the fungus was still found occasionally in the sputum, but there were no clinical symptoms of infection. The geotrichosis was preceded by an attack of cystitis caused by *Candida albicans*.

2289. THJØTTA (T.), RASCH (S.), & URDAL (K.). **Preparation of fungous antigens for immunization and for serological reactions. A preliminary report.**—*Acta path. microbiol. scand.*, 28, 2, pp. 132–138, 1951.

At the Wilhelmsen Bacteriological Institute, Oslo, Norway, the authors have obtained effective antigens from several strains of *Geotrichum* and *Candida* spp. by the use of extracts partly or highly purified by chemical procedures. After a simple extraction in buffered acetate solution a clear fluid emerges, which can be used both as an immunizing agent and as a reagent in the test-tube. Precipitation of the simple extract with alcohol and redissolution of the precipitate in water results in a partly purified antigen consisting of polysaccharides and proteins, which may be further purified by the precipitation of the latter. This purified antigen contains complex carbohydrates and a small amount of nitrogen. The highest purified antigen exerts only a weak action in the animal body and should not be used in immunization experiments, but it seems to yield more specific reactions than the other fractions *in vitro*.

2290. MANN (B.) & MIALI (W.). **A case of farmer's lung.**—*Tubercle*, 33, 2, pp. 48–49, 2 figs., 1952.

A case of presumed bronchomycosis in a 36-year-old agricultural labourer is reported from Middleton Hospital, Ilkley, Yorks. One specimen of sputum examined a few weeks before admission in March 1951 yielded a scanty growth of *Monilia* [*Candida*], and X-rays at the same time and later revealed a miliary-like stippling of both lung fields. Infection may have been contracted from the rotten hay and straw, flecked with clusters of a white mould, with which the patient was working during the damp summer and autumn of 1950.

Intradermal tests elicited positive reactions to moulds and other irritants. At the time of discharge on 21st April, following rest and iodide therapy, both lung fields were almost clear of mottling.

2291. TOMASZEWSKI (T.). **Side-effects of chloramphenicol and aureomycin, with special reference to oral lesions.**—*Brit. med. J.*, 1951, 4703, pp. 388–392, 1951.

In a survey of the side effects encountered in 126 cases treated with chloramphenicol and aureomycin at the Royal Infirmary, Edinburgh, the most conspicuous changes were observed in the oral cavity. Scrapings of the tongue generally revealed a rapid disappearance of the normal bacterial flora and the establishment of a fungal population, mostly composed of *Candida albicans* [cf. No. 1942 and next entries]. The antibiotic therapy further induced general, gastro-intestinal, and genito-rectal manifestations. The side effects were twice as prevalent in women as in men and developed more rapidly in cases previously treated with penicillin and streptomycin.

2292. ORMEROD (F. C.) & FRIEDMANN (I.). **A case of moniliasis.**—*Brit. med. J.*, 1951, 4745, p. 1439, 1951.

A case of moniliasis (*Candida albicans*) of the oropharynx, spreading to the bronchi, in a 49-year-old female apparently developed in the course of intensive antibiotic therapy for maxillary sinusitis with penicillin, streptomycin, and aureomycin [cf. preceding and next entries]. The patient succumbed at the Royal National Throat, Nose and Ear Hospital, London, to a severe haemoptysis and particulars are given of the post-mortem findings.

2293. REICHES (A. J.). **Antibiotic sensitivity and moniliasis.**—*Arch. Derm. Syph.*, Chicago, 64, 5, pp. 604–606, 1951.

From a perusal of the relevant literature and from personal experience in his practice at St. Louis, Missouri, the author concludes that infection by *Candida albicans* subsequent to antibiotic therapy [see preceding entries] is likely to be a sequel to the tissue changes induced by the sensitization reaction.

2294. BRYGOO (E.-R.). **Quarante souches de *Candida* isolées à Saigon de l'expectoration de tuberculeux.** [Forty strains of *Candida* isolated at Saigon from the sputa of tubercular subjects.]—*Ann. Inst. Pasteur*, 81, 6, pp. 676–680, 1951.

The sputa of 38 out of 100 tubercular subjects at Saigon, Indo-China, gave rise to yeast-like fungi. Of the 40 strains of *Candida* studied, 20 represented *C. albicans*, eight *C. tropicalis*, and three each *C. parapsilosis*, *C. krusei*, *C. guilliermondi* group, and the azymatic group. Six samples produced a mixed flora, consisting of *C. tropicalis* and *C. krusei* (twice), *C. albicans* and *C. krusei*, *C. albicans* and *C. tropicalis*, *C. guilliermondi* and an azymatic species, and *C. parapsilosis* and a yeast.

2295. D'ESHOUGUES (J. R.), ZAFFRAN (A.), & COHEN-ADAD (Mme F.). **Blastomycose pulmonaire à '*Candida tropicalis*'.** [Pulmonary blastomycosis due to *Candida tropicalis*.]—*Bull. Soc. méd. Hôp. Paris*, Sér. 4, 67, 25–26, pp. 1128–1135, 6 figs., 1 graph, 1951.

Full particulars are given of a case of primary pulmonary blastomycosis due to *Candida tropicalis* in a 20-year-old French girl resident at Algiers. Special interest attaches to the slow course of the illness, which had induced only moderate functional symptoms during the 15-year-period since its onset.

2296. ZAHAWI (S.) & SEMAH (R. D.). **Broncho-pulmonary moniliasis.**—*Trans. roy. Soc. trop. Med.*, 44, 5, pp. 551–554, 6 figs., 1951.

A case of bronchopulmonary moniliasis (*Candida albicans*) in a 50-year-old male is reported from Iraq—the first in the country in a living subject, though

the fungus was accidentally discovered at a post-mortem examination in 1942. The pathogen was isolated from the sputum and also from ulcers on the tongue, which is believed to have been the original site of infection. Marked benefit was derived from two courses of streptomycin.

2297. PACHEV (I. P.), RIMALOVSKI (F. G.), & MARCOVSKI (L. E.). **A fatal case of acute moniliasis.**—*Bull. Inst. Microbiol. Acad. bulg. Sci.*, 1, 1, pp. 183–192, 1950. [Abs. in *Intern. Med. (Excerpt. med., Sect. VI)*, 5, 9, p. 1169, 1951.]

From Sofia, Bulgaria, the authors report a case of acute pulmonary moniliasis (*Candida albicans*) in a 37-year-old male, which terminated fatally after 22 days. Symptoms included a cough with purulent sputum, numerous râles, faint respiratory sounds over the right upper part of the right lung, and enlargement and hardening of the liver. Radiographic examination revealed non-homogenous shadowing of both pulmonary fields. The pathogen was isolated from the liver, spleen, lung, cerebrospinal fluid, and sputum after death.

2298. SEUDERLING (Y.) & KUMLIN (T.). **Some aspects of pulmonary mycosis.**—*Ann. Med. intern. Fenn.*, 40, 4, pp. 295–304, 3 figs., 1951.

Following a general survey of the literature on pathogenesis, pathological anatomy, clinical symptoms, and X-ray pictures of pulmonary mycosis, the authors report three cases from the Kivelä Hospital, Helsinki, Finland. In two patients (males, 56 and 57 years old) *Candida albicans* was a secondary finding, and in the third (female, 17) it was associated with tuberculosis [No. 2234].

2299. HESSELTINE (H. C.) & BECKETTE (E. S.). **The specific treatment of vaginal mycosis.**—*Amer. J. Obstetr.*, 58, 3, pp. 548–558, 1949.

A new and specific therapy for vaginal mycosis (*Candida albicans*) [Nos. 1951, 2153–2155] is described, involving the use of 3 per cent. ricinoleic acid in a buffered acid jelly. At the Chicago Lying-In Hospital, out of a total of 98 patients (68 pregnant and 30 non-pregnant) treated by this method, 50 (74 per cent.) of the former and 27 (90 per cent.) of the latter were cured, mostly within a period of two to eight weeks. The skin, mouth, and intestinal tract may easily serve as foci for vaginal reinfection.

2300. PEARSON (T.). **The identification of yeast-like organisms from the vagina.**—*Bull. Inst. med. Lab. Technol.*, 15, 6, pp. 104–106, 1950. [Abs. in *Dermatol. & Venereol. (Excerpt. med., Sect. XIII)*, 5, 9, p. 394, 1951.]

At the Royal Samaritan Hospital for Women, Glasgow, various strains of *Candida*, *Cryptococcus*, and undetermined yeast-like organisms were isolated from vaginal preparations on a modified Sabouraud's medium with the addition of 0.1 per cent. albucid (soluble sulphacetamide 10 per cent. W/V).

2301. MOORE (M.) & MARCUS (M. D.). **Green nails: the role of *Candida* (Syringospora, Monilia) and *Pseudomonas aeruginosa*.**—*Arch. Derm. Syph., Chicago*, 64, 4, pp. 499–505, 5 figs., 1951.

Three cases of green discoloration of the finger nails are reported from St. Louis, Missouri, one involving *Candida tropicalis* and two *C. albicans* (once in association with *Pseudomonas aeruginosa*).

2302. NIÑO (F. L.), FERRADA URZÚA (L. F.), & NOLTE (ALIDA). **Estudio y clasificación de 156 cepas del género '*Candida*' Berkhout, 1923.—Consideraciones sobre candidomicosis (moniliasis).** [Study and classification of 156 strains of the genus *Candida* Berkhout, 1923.—Considerations on candidomycosis (moniliasis).]—*Mycopathologia*, 5, 2–3, pp. 250–259, 1951. [English summary.]

A study at the Institute of Clinical Surgery, Buenos Aires, Argentina, of 156 isolates of *Candida*, mostly of human origin, revealed the predominance

and strongly parasitic character of *C. albicans* in a number of pathological conditions, which it is proposed to group under the general heading of 'candidomycosis'. Other species represented were *C. parakrusei*, *C. chalmersii*, *C. krusei*, *C. tropicalis*, *C. guilliermondi*, *C. intermedia*, and *C. flaveri*.

2303. FUSILLO (M. H.), LEARNARD (D. L.), & DOZIER (S. M.). **A simplified technic for the identification of *Monilia albicans* (*Candida albicans*).**—*Amer. J. clin. Path.*, 22, 1, pp. 83–84, 4 figs., 1952.

At the Walter Reed Army Hospital, Washington, D.C., an inexpensive, rapid diagnostic technique has been devised for the identification of *Candida albicans*, involving the use as a medium of a mixture of two drops of chicken plasma dissolved in 5 ml. sterile distilled water through which carbon dioxide had been passed, and one drop of chick embryo extract in the well of a Fisher-Littman culture slide. A cover-slip bearing a small amount of inoculum from a fresh Sabouraud's agar slant was inverted on the mixture, and after the plasma had clotted the cover-slip was sealed round the edges with a mixture of paraffin and 5 per cent. petrolatum. The slides were incubated at 30° C. and examined daily under high magnification for at least three days. Pseudomycelia were usually observed after 24 hours, and in cultures of *C. albicans* which produced chlamydospores on maize meal agar a characteristic enlarged terminal spore attached to a short mycelium was consistently formed near the centre of the clot.

2304. HARANT (H.), RIOUX (J.), & CARON (Mme J.). **Sensibilité de quelques souches de *Candida* (levures pathogènes) aux antibiotiques.** [Sensibility of some strains of *Candida* (pathogenic yeasts) to antibiotics.]—*Bull. Soc. Path. exot.*, 44, 9–10, p. 534, 1951.

From the preliminary results of experiments in progress at the Faculty of Medicine, Montpellier, France, to determine the effects of several antibiotics of fungal origin on Sabouraud's agar cultures of *Candida* it seems clear that aureomycin, and to a lesser extent terramycin, are fungistatic. The former is indicated for general administration in cases of visceral infection and for local therapy in those of thrush and intertrigo.

2305. VAN DER WESTHUIZEN (G. C. A.) & OXFORD (A. E.). **Studies on the alimentary tract of Merino Sheep in South Africa. XVI. On the identity of *Schizosaccharomyces ovis*. Part I. Some yeast-like organisms isolated from the rumen content of Sheep fed on a lucerne diet.**—*Onderstepoort J. vet. Sci.*, 24, 1–2, pp. 119–124, 1950.

All attempts at the isolation from rumen ingesta of merino sheep by standard mycological procedures of the organism described by Quin (*Onderstepoort J. vet. Sci.*, 18, 1–2, 1943) as *Schizosaccharomyces ovis* gave negative results. None of the other yeast-like organisms present (species of *Monilia* and *Mucor*) possessed the characteristic properties of '*S. ovis*', viz., the capacity for rapid fermentation of added glucose with simultaneous storage of massive amounts of glycogen in the cells. From this and other evidence it is concluded that '*S. ovis*' is misnamed and probably does not belong to the Eumycetes at all.

2306. LLOYD (J. B.), SEXTON (L. I.), & HERTIG (A. T.). **Pulmonary mucormycosis complicating pregnancy.**—*Amer. J. Obstetr.*, 58, 3, pp. 548–552, 1 fig., 1949.

The post-mortem examination of a 26-year-old negress who died shortly after delivery of a stillborn infant at the Boston Lying-In Hospital revealed massive pulmonary invasion by the mycelium of a fungus tentatively identified by Dr. C. W. Emmons as a species of *Mucor*.

2307. MOMBERG-JÖRGENSEN (V. S.). **Enzoötic mycosis in Mink.**—*Amer. J. vet. Res.*, 11, pp. 334–338, 1950. [V.B., 21, No. 979.]

Nine mink on one farm developed subcutaneous nodules accompanied by a tendency to central necrosis, spontaneous perforation through the skin, and fistula. In some animals the processes quickly healed, but in others they spread infiltratively into the surrounding tissue, and in one numerous metastases occurred in the regional lymph node and the myocardium. Cultures from the processes yielded *Absidia lichtheimi* [? *A. corymbifera*: No. 155].

2308. PANSHIN (A. F.). **Die Therapie der Onychomycosen.** [The therapy of the onychomycoses.]—*Vestn. Venerol.*, 3, pp. 50–51, 1950. [Russian. Abs. in *Zbl. Haut- u. Geschl.Krankh.*, 77, 4–5, pp. 202–203, 1951.]

A description is given of the writer's method for the treatment of onychomycoses. It consists essentially in the removal of the nail plate with a 10 per cent. solution of sodium sulphide, painting the nail bed with iodine solution, followed the next day by the application of an iodine—salicylic acid—potassium iodide—lanoline dressing (to be renewed daily), and five days later by the removal of the membranous residue of the two latter processes to be repeated two or three times, while the nail bed and growing nail should be painted by the patient with an iodine solution for a considerable period. There were only two recurrences of the infection among 178 patients treated in this way at the Leningrad Skin Clinic.

2309. PEREIRO MIGUENS (M.). **Onixis tricofticas e inespecificas.** [Trichophytic and non-specific onychias.]—*Act. dermat.-sif., Madr.*, 42, 8, pp. 749–767, 7 figs., 1951.

This study of the etiology, symptomatology, mycology, and therapy of trichophytic and non-specific onychias is based on the observation of 22 cases at the Faculty of Medical Sciences, Buenos Aires, Argentina. Among the fungi isolated were *Trichophyton rubrum*, *Candida parapsilosis*, *Hemispora stellata* [*Sporendonema epizoum*: No. 2040], *Aspergillus glaucus*, *A. niger*, and *Pullularia pullulans*. The author's findings are discussed in relation to 51 contributions to the relevant literature.

2310. VANBREUSEGHEM (R.). **Lésions déterminées in vitro par les dermatophytes sur des cheveux isolés.** [Lesions determined *in vitro* by dermatophytes on single hairs.]—*C. R. Soc. Biol., Paris*, 143, 17–18, pp. 1302–1303, 1949.

Of the 16 species of dermatophytes used in *in vitro* tests on single hairs at the Prince Leopold Institute of Tropical Medicine, Antwerp, Belgium [No. 1764], the most active were *Ctenomyces* [*Trichophyton*] *persicolor* [No. 1739], *C. asteroides* [*T. mentagrophytes*], *Sabouraudites felineus* [*Microsporum canis*], *S. duboisi* [No. 1762], and certain strains of *Epidermophyton floccosum*.

2311. TELLO (E. E.). **Epidemiologia de los tiñas del cuero cabelludo en la ciudad de Córdoba (R.A.).** [Epidemiology of the tineas of the scalp in the city of Córdoba (R.A.).]—*Rev. méd. Córdoba*, 38, 4, pp. 155–161, 1950.

During the period from 1935 to 15th October, 1949, 288 cases of tinea capitis in children aged between 1 and 15 years were investigated in the city of Córdoba, Argentina, of which 280 (97.2 per cent.) were microsporososes and eight (2.8 per cent.) trichophytoses. *Microsporum canis* was isolated from ten of the patients with microsporiasis. Males were more prone to microsporiasis than females in this series of cases (174 as against 106), whereas six of the eight persons suffering from trichophytosis were girls. There were also nine cases of favus originating in rural districts.

2312. FLORESTANO (H. J.) & BAHLER (M. E.). **Antifungal properties of the polymyxins.**—*Proc. Soc. exp. Biol., N.Y.*, 79, 1, pp. 141–143, 1952.

At the Pitman-Moore Co., Division of Allied Laboratories, Indianapolis, Indiana, polymyxins A, B, D, and E were tested by the agar-plate and serial dilution procedures for their activity against *Candida albicans*, *Trichophyton mentagrophytes*, *T. purpureum* [*T. rubrum*], *Microsporium audouinii*, *M. lanosum* [*M. canis*], and *Debaryomyces* [*Cryptococcus*] *neoformans* on a neopeptone (1 per cent.)–maltose (4 per cent.) medium, with and without 10 per cent. horse serum. Benzoic, salicylic, and undecylenic acids, bis (2-hydroxy-5-chlorophenyl) methane (known commercially as G4), and asterol [No. 2322] were included for comparative purposes.

In the presence of serum, polymyxins B and E proved equal to G4 in their fungistatic action on *Candida albicans*, while the other preparations tested were ineffectual. G4 exerted the greatest activity against *T. mentagrophytes*, undecylenic acid and asterol were about twice as effective as polymyxins B and E, while benzoic and salicylic acids failed to control the pathogen at 25 mg. per cent. Polymyxin E was more active than the organic acids against *T. rubrum*, and it further proved more effective than benzoic and salicylic acids, equal to undecylenic acid, but inferior to asterol and G4 in the suppression of *M. audouinii*. Polymyxins B and E were the most active of the substances tested in the inhibition of *Cryptococcus neoformans*.

The anti-fungal activity of the polymyxins did not appear to suffer any appreciable diminution from the presence of serum in the medium. Benzoic and salicylic acids were also only slightly affected, whereas the activity of undecylenic acid and G4 was markedly decreased. On the other hand, the admixture of protein seemed to enhance the activity of asterol.

2313. PECK (S. M.). **Evaluation of new fungicides.**—*Chem. Prod.*, N.S., 13, 5, pp. 176–179, 1951.

In the procedure used for the evaluation of disinfectants for the therapy of dermatomycoses at the Mount Sinai Hospital, New York, an attempt is made to demonstrate not only their fungicidal and fungistatic activity, but also their effects on the metabolism of the causal organisms in relation to trichophytin production. Typical examples are given of the application of the method to the assay of some standard and newer preparations.

2314. COHEN (D. M.) & GOLDIN (M.). **Superficial fungus infections: methods of diagnosis.**—*Chicago med. Sch. Quart.*, 11, 2, pp. 53–57, 4 figs., 1950.

Next to a knowledge of the clinical symptoms of superficial fungous infection, the direct mount of skin scrapings with potassium hydroxide is the most important diagnostic aid [see next entry], while other useful procedures include cultural examination on Sabouraud's dextrose agar, exposure to filtered ultra-violet (Wood's) light, and intracutaneous and therapeutic tests.

2315. COHEN (D. [M.] & GOLDIN (M.). **Superficial fungus infections—the direct mount and culture in tinea pedis.**—*Ill. med. J.*, 100, 4, pp. 252–253, 1951.

In 1,000 cases of suspected tinea pedis comprised in a joint investigation of the Chicago Medical School and the Mt. Sinai Medical Research Foundation, Chicago, positive potassium hydroxide mounts were obtained in 488 (48.8 per cent.), of which 158 (32.4) were positive by culture [see preceding entry]. Of the 512 negative direct mounts, only 20 (3.9 per cent.) were positive by culture. Species of *Trichophyton* were isolated over 11 times as frequently as *Epidermophyton* (138 and 12, respectively), *Microsporium* was represented in six cases, and *Candida albicans* and a mixture of *Trichophyton* and *Epidermophyton* in two each. In the authors' opinion, the mycotic etiology of an

infection may be reliably established by 10 per cent. potassium hydroxide mounts of scrapings from the feet, the material being placed on a slide, a drop of the chemical and a cover-slip added, and the preparation warmed gently to facilitate clearing prior to microscopic examination.

2316. NÉKÁM (L.) & POLGÁR (P.). **L'emploi de la vitamine K dans le traitement des dermatomycoses profondes.** [The use of vitamin K in the treatment of deep dermatomycoses.]—*Acta derm.-venereol., Stockh.*, 31, 3, pp. 344-348, 4 figs., 1951. [German and English summaries.]

Nine cases of apparently complete cure of kerion by means of vitamin K injections (1 to 3 cgm. daily) are reported from the University Dermatological Clinic, Budapest, Hungary [No. 1781]. The causal organisms isolated from seven of these patients were identified on *Trichophyton gypsum lacticolor* [? *T. lacticolor*: No. 1009], *T. rosaceum*, *T. cerebriforme* [*T. flavum*], and *T. g. asteroides* [*T. mentagrophytes*] (four).

2317. CANIZARES (O.) & SHATIN (H.). **Studies of dermatophytes in culture media containing 2, 3, 5-triphenyltetrazolium chloride.**—*J. invest. Derm.*, 17, 6, pp. 323-336, 5 pl., 1951.

At the Veterans Administration Hospital, Bronx, New York, 11 species of dermatophytes and three other fungi pathogenic to man were cultured on Sabouraud's dextrose agar containing 2, 3, 5-triphenyltetrazolium chloride. Similar cultures were made on standard media to which the tetrazolium salt was added after 14 days' growth. In another series six strains of *Trichophyton gypsum* [*T. mentagrophytes*] were cultured on tetrazolium media.

In all cases a red coloration, due to the precipitation of formazan, developed in the submerged mycelia and in some species on the surface growth as well. Specific divergences in gross colour changes, measured by the extent of formazan development in cultures on the tetrazolium salt medium, were both marked and constant and might serve as a simple method for the differentiation of dermatophytes. Microscopic colour changes comprised diffuse red staining, fine and coarse granules, and spheres or ovoids inside the mycelia.

The reduction of tetrazolium salts to red formazan within the dermatophyte cells is attributed to enzyme systems of the dehydrogenase groups. Great potentialities for physiological studies on the skin fungi are considered to reside in this reaction.

2318. KÖNIGSBAUER (H.). **Über die Wirkung schwefelhaltiger Aminosäuren auf das Wachstum verschiedener Fadenpilze 'in vitro'.** [On the effect of sulphur-containing amino acids on the growth of various hyphomycetes *in vitro*.]—*Mycopathologia*, 5, 2-3, pp. 173-177, 1 graph, 1951.

The growth of several pathogenic fungi, including *Trichophyton mentagrophytes*, *T. purpureum* [*T. rubrum*], *T. interdigitale*, *Microsporium audouinii*, *M. lanosum* [*M. canis*], *Cladosporium wernecki* [No. 1802], and *Hemispora stellata* [*Sporendonema epizoom*: No. 2309], in pure culture on a modified Czapek-Dox medium was more or less inhibited by l-cystein hydrochloride and thioglycolic acid at concentrations of 1 in 2,000 and upwards. The fungistatic activity of these compounds, which are considered to merit clinical trials, is ascribed to the sulphur radical.

2319. CARRIÉ (C.). **Zur Begutachtung der Epidermophytie bei Bergleuten.** [On arbitration in epidermophytosis among miners.]—*Z. Haut- u. GeschlKrankh.*, 10, 2, pp. 48-56, 1951.

In connexion with a discussion on the medico-social and legal problems involved in arbitration in cases of occupational disease, with special reference

to epidermophytosis [chiefly *Epidermophyton floccosum*] among miners [No. 2171], the writer cites statistics to demonstrate the increase in the incidence of this complaint in Germany during recent years. Thus, at the Düsseldorf Medical Clinic, out of a total of 321 dermatomycoses treated between 1937 and 1940, 239 (75.1 per cent.) were epidermophytoses, while the corresponding figures for the period from 1946 to 1949 were 1,382, 1,164, and 81.3 per cent., respectively.

2320. CARRIÉ. **Über Mykide bei der Epidermophytie.** [On mycids in epidermophytosis].—*Arch. Derm. Syph., Berl.*, 191, pp. 655–657, 1950.

In connexion with a survey of the incidence, etiology, diagnostic problems, and therapy of 'mycids' in epidermophytosis [*Epidermophyton* spp.: No. 2328], the writer gives the number of cases of the complaint treated at a Düsseldorf clinic in 1937, 1938, 1939, 1946, 1947, and 1948 (up to August) as 19, 17, 34, 39, 46, and 25, respectively, the corresponding figures for trichophytosis [*Trichophyton* spp.] being 7, 8, 10, 32, 17, and 11, for microsporiasis [*Microsporum* spp.] 1, 5, 8, 7, 5, and 6, and for favus [*T. schoenleini*] 7, 4, 0, 2, 1, and 1, respectively.

2321. RICHTER (R.) & SCHRAUFSTÄTTER (E.). **Zur Chemotherapie der Pilzinfektionen. III. Mitteilung. Tier-experimentelle Untersuchungen zur Toxizität des 2,2'-Dioxy-5,5'-dichlordiphenylsulfids (D25) und des 2,2'-Dioxy-3,3', 5,5'-tetrachlordiphenylsulfids (D26). IV. Mitteilung. Klinische Erfahrungen bei der Anwendung von 2,2'-Dioxy-5,5'-dichlordiphenylsulfid (D25) bei Pilzkrankheiten.** [Contribution to the chemotherapy of mycotic infections. Note III. Animal-experimental investigations on the toxicity of 2,2'-dioxy-5,5'-dichlorphenylsulphide (D25) and of 2,2'-dioxy-3,3', 5,5'-tetrachlordiphenylsulphide (D26). Note IV. Clinical observations on the application of 2,2'-dioxy-5,5'-dichlorphenylsulphide (D25) in mycotic diseases].—*Arch. Derm. Syph., Berl.*, 190, 6, pp. 543–578, 1950.

Full particulars are given of experiments on laboratory animals at the University Skin Clinic, Erlangen, Germany, to determine their tolerance of 2,2'-dioxy-5,5'-dichlorphenylsulphide (D25) and 2,2'-dioxy-3,3', 5,5'-dichlor-tetrachlordiphenylsulphide (D26), which had already exerted a powerful fungistatic action in *in vitro* tests [No. 1780]. The results obtained with D25, of which white mice and guinea-pigs tolerated doses up to 1 mg. per gm. and white rats and rabbits up to 2 mg., according to the mode of administration, were considered to justify clinical trials. The toxicity to the animals of 2,2'-dioxy-3,3', 5,5'-tetrachlordiphenylsulphide (D26) was about three times as great as that of D25, but in view of its outstanding fungistatic properties the possibility of its combination with the latter in small doses may be considered.

Very encouraging results were given in clinical trials with D25 (which may be given either internally or externally as indicated) in a series of mycoses, including microsporiasis (*Microsporum audouinii*), various forms of trichophytosis (*Trichophyton gypseum asteroides* [*T. mentagrophytes*], *T. rosaceum*, *T. griseum*, and *T. laticolor*), interdigital epidermophytosis (*Epidermophyton* [*T. interdigitale*]), favus (*Achorion* [*T. schoenleini*]), and deep blastomycosis of the skin (*Torulopsis minor* and *Candida parapsilosis*).

2322. SEALE (ELIZABETH E.). **Studies on the fungistatic powers of a new benzothiazol and an antihistaminic compound.**—*Canad. med. Ass. J.*, 65, 6, pp. 582–584, 1951.

The results of *in vitro* studies at McGill University, Montreal, using the mycophil broth sensitivity test, the agar-plate technique, and the peri-

cylinder assay method, suggest that both asterol dihydrochloride (2-dimethyl-amino-6-(beta diethylaminothoxy-benzothiazole) [Nos. 2185-6, 2312, 2344] and thephorin (2-methyl-9-phenyl-2,3,4,9-tetrahydro-1-pyridindene hydrogen tartrate) are fungistatic to a number of dermatophytes. In the mycophil broth test, asterol dihydrochloride completely inhibited the growth of *Trichophyton mentagrophytes*, *T. rubrum*, *Microsporum audouini*, *M. fulvum* [*M. gypseum*], and *Epidermophyton floccosum* at a concentration of 0.3125 mgm. per ml. Thephorin was also fungistatic at the same strength to *T. mentagrophytes*, *T. rosaceum*, *M. audouini*, *M. canis*, and *E. floccosum*, and inhibited the growth of *T. violaceum* and *T. concentricum* at 0.15, but a concentration of 0.625 mgm. per ml. was necessary to produce comparable effects on *T. rubrum* and *M. gypseum*.

By means of the agar-plate method, the development of resistance to asterol dihydrochloride was demonstrated in cultures of *M. audouini* isolated from cases of tinea of the scalp after six to seven weeks' administration of the treatment.

2323. CHENG (W. W. F.). **In vitro antifungal activity of some common Chinese herbs on certain pathogenic and non-pathogenic fungi.**—*Chin. med. J.*, 69, 9-10, pp. 427-430, 1951.

Of 51 Chinese plants of 33 families tested in the laboratory at the China Union Medical College, Peking, for their effects on eight pathogenic and three non-pathogenic fungi on double-strength Sabouraud's medium, 21 showed varying degrees of activity in aqueous extracts. Thus, the growth of *Trichophyton mentagrophytes* was inhibited by *Acorus gramineus*, *Polygonum aviculare*, and *Gardenia florida* at 1 in 10, *Eriocaulon australe* and *Rehmannia glutinosa* at 1 in 20, *Juniperus chinensis* at 1 in 40, *Coptis chinensis* at 1 in 80, *Prunus mume* and *Scrophularia oldhami* at 1 in 160, and *Cordyceps sinensis* at 1 in 320; of *Epidermophyton floccosum*, by *A. gramineus*, *Phatycodon grandiflorum*, *Cajanus indicus*, *G. florida*, *Evodia rutaecarpa*, *Angelica anomala*, and *Setinum japonicum* at 1 in 10, *Cordyceps sinensis* at 1 in 20, *Atractylis ovata* and *J. chinensis* at 1 in 40, *Belamcaruda chinensis* and *Scrophularia oldhami* at 1 in 80, *Eriocaulon australe* at 1 in 160, and *Prunus mume* at 1 in 320; of *Microsporum gypseum* by *G. florida*, *Angelica anomala*, and *Setinum japonicum* at 1 in 10, *E. australe* and *Coptis chinensis* at 1 in 20, *J. chinensis* at 1 in 40, *Cordyceps sinensis* and *P. mume* at 1 in 80, and *R. glutinosa* at 1 in 160; of *M. lanosum* [*M. canis*] by *Panax ginseng*, *Polygonum aviculare*, *Anemone cernua*, *Aconitum lycostomum*, and *G. florida* at 1 in 10, *J. chinensis*, *Angelica anomala*, and *S. japonicum* at 1 in 20, *C. sinensis* and *R. glutinosa* at 1 in 40, *Stephania tetrandra* at 1 in 80, and *E. australe* and *Scrophularia oldhami* at 1 in 160. *Cryptococcus neoformans* was the only one of four systemic fungi to succumb to any of the plant extracts (*Coptis chinensis* at 1 in 80).

2324. GREENWOOD (K.). **The treatment of tinea in Malaya.**—*J.R. Army med. Cps*, 97, 3, pp. 157-164, 1951.

The author presents an assessment of the relative value of various fungicides used in the treatment of some 80 cases of tinea over a three-year period in Malaya. Chrysarobin (2 per cent.), made up in Lassar's paste, proved to be the most effective single preparation, though undecylenates were of great value in special cases. The therapy of complications of fungal infection is discussed and some suggestions for prophylaxis are offered.

2325. MARPLES (M. J.). **Some observations on the occurrence and clinical course of tinea capitis and corporis in Otago.**—*N.Z. med. J.*, 50, 279, pp. 460-479, 2 graphs, 1951.

Between 1947 and 1950, 200 cases of tinea capitis and 136 of tinea corporis were examined at the Medical School, University of Otago, Dunedin, New Zealand. All the subjects in the former group were under 14 (mostly under 10) years of age and 128 (64 per cent.) were boys. The ages of the patients in the latter group ranged from 20 months to 65 years and 62 (45.6 per cent.) were males. Of the 186 positive cultures obtained from the cases of tinea capitis, 162 (87 per cent.) were assigned to *Microsporum canis*, eight to *M. audouinii*, 13 to *M. gypseum*, and three to *Trichophyton* spp. The tinea corporis material yielded 89 positive cultures, of which 74 were identified as *M. canis*, four as *M. gypseum*, 10 as *T. mentagrophytes*, and one as *T. rubrum*. Contact with cats was reported by 40 per cent. of the patients, and in 20 of the animals definite evidence of infection was obtained; in 9.2 per cent. of the cases there were human but no animal contacts. The incidence of the tineas was highest from March to May and lowest in October and November. A study of the clinical course of tinea capitis in 85 cases disclosed three patterns, viz., no spread, local spread, and generalized spread, regardless of the topical therapy applied. The clinical course of 31 cases of tinea corporis is described.

Appendix I presents six specimen case histories of tinea capitis, two each illustrating the three above-mentioned patterns, and appendix II briefly describes the application of iodine ionphoresis for the treatment of the complaint.

2326. TRICE (E. R.) & SHAFTER (JUNE C.). **Occurrence of *Microsporum gypseum* (*M. fulvum*) infections in the District of Columbia area: report of six cases.**—*Arch. Derm. Syph., Chicago*, 64, 3, pp. 309-313, 2 figs., 1951.

The cases of tinea capitis and four of tinea corporis caused by *Microsporum gypseum* are reported for the first time from the District of Columbia area. All the patients were children except one, a 57-year-old female. An intense inflammatory reaction accompanied the infection, which yielded to local therapy. Three further cases, two of tinea capitis and one of tinea corporis, due to the same fungus were observed after the submission of this report for publication. Fluorescence was absent in one of the cases of tinea capitis.

The incidence of infection by *M. gypseum* is on the increase in the continental United States, where it appears to be endemic.

2327. JOHNSON (S. A. M.) & GRIMM (NANCY Y.). **The amino acid requirements of *Microsporum fulvum*.**—*J. invest. Derm.*, 17, 6, pp. 305-310, 1951.

In one experiment at the University of Wisconsin School of Medicine, Madison, single amino acids were added to a basic medium to determine the effect of each on the growth of *Microsporum fulvum* [*M. gypseum*: Nos. 1993, 2176], while in another all 19 of these compounds were introduced and eliminated one by one to ascertain which was most essential. They were found to fall into three groups, of which (1), essential for normal initial growth, was represented by leucine, phenylalanine, proline, tryptophane, tyrosine, valine, and cystine; (2), non-essential for growth, by lysine, serine, and hydroxyproline (the last-named being, in fact, actively inhibitory); and (3), essential for growth, by methionine, alanine, arginine, aspartic acid, isoleucine, histidine, threonine, glutamic acid, and glycine.

2328. STEIN (C. U.). **Beitrag über die Mykosehäufigkeit im Oldenburger Raum und deren Behandlung an der Oldenburger Klinik.** [Contribution to the frequency of mycosis in the Oldenburg region and its treatment at the Oldenburg clinic.]—*Z. Haut- u. GeschlKrankh.*, 10, 2, pp. 57-71, 1951.

Among 446 dermatomycoses treated at the Skin Clinic, Oldenburg, Germany, during the last four years there were three cases of favus [*Trichophyton*

schoenleini], two of microsporosis [*Microsporum* spp.], 47 of trichophytia profunda, 39 of trichophytia superficialis, 100 of interdigital epidermophytosis (*Epidermophyton* [*T.*] *interdigitale*) with mycids on the hands [No. 2320], 98 of generalized epidermophytoses (*E.* [*T.*] *rubrum* and *T.* spp.), 61 of varicose eczemas of the leg with mycotic superinfections, 30 of pityriasis rosea, 23 of pityriasis versicolor [*Malassezia furfur*], 20 of erythrasma, 15 of trichophytic or epidermophytic onychomycosis, and three of secondary oidiomycetic erosio interdigitalis. The methods of treatment employed are indicated.

2329. SEROWY (C.) & JUNG (H.-D). **Die Mikrosporie als dermatologisches Problem.** [Microsporosis as a dermatological problem.]—*Derm. Wschr.*, 124, 27, pp. 665–678, 5 figs., 1 map, 1951.

An epidemic of microsporosis in Mecklenburg, Germany, originating in 1948 and still rife at the time of writing, prompted this exhaustive discussion, based on personal observations and a survey of the relevant literature, of the epidemiology, etiology, and therapy of the complaint. Of the 283 cases notified in the province up to September, 1950, 104 (47 boys and 57 girls) were under observation at the University Skin Clinic, Greifswald. Their average age lay between eight and nine years, and the requisite period of treatment was three months and two days for girls and a month longer for boys. Infection occurred almost exclusively in the large towns along the coast, only isolated cases being reported from the country. As in other parts of the country [No. 1232 and next entries] *Microsporum audouini* predominated in the cultures, but *M. felineum* [*M. canis*] was the agent in a small outbreak in a children's home and there were two cases of infection by *Trichophyton cerebriforme* [*T. flavum*] and three by *Aleurisma carnis*, a mycological rarity in this capacity.

The importance of manual (as opposed to röntgen and thallium) depilation in the treatment of microsporosis is emphasized. It requires, however, to be followed by topical applications of a fungicide to eliminate infection from the follicles; thianthrol ointment (dimethylthianthren in a water-in-oil emulsion, supplied by Fahlberg-List, Magdeberg) was outstanding among a number of preparations tested.

2330. KIMMIG (J.) & JERCHEL (D.). **Die Wirkung von Invertseifen auf die durch Pilze und Kokken bedingten Hautkrankheiten.** [The effect of invert soaps on the skin diseases induced by fungi and cocci.]—*Klin. Wschr.*, 28, 25–26, pp. 429–451, 1950.

Particulars are given of the response of patients suffering from various dermatomycoses at the Heidelberg University Skin Clinic to topical applications of mycal [No. 1796 and next entry] in the form of wet bandages and cooling salves (1 in 10,000) followed by a talcum powder containing 0.1 per cent. of the fungicide. Of 60 cases of epidermophytosis (*Epidermophyton Sabouraud* [*? E. floccosum*]), 50 were cured by the first series of treatments and the remainder after the second or third, the average period being 21 days. One series sufficed in 15 out of 20 cases of trichophytosis (*Trichophyton gypseum* [*T. mentagrophytes*]), the rest requiring one or two more and the average period being 19 days. The treatment of 20 children with microsporosis (*Microsporum audouini*) after depilation was successful in 16 cases after an average period of 10 weeks.

2331. KIESSLING (W.). **Zur Epidemiologie der Mikrosporie im Heidelberger Bezirk und eine neuzeitliche Behandlung der Mikrosporie.** [On the epidemiology of microsporosis in the Heidelberg region and a modern treatment of microsporosis.]—*Derm. Wschr.*, 125, 7, pp. 145–153, 2 figs., 1 map, 1952.

The course of an epidemic of microsporosis in the Heidelberg region of Germany [see preceding entries] is traced from 1947 to 1951, during which period 63 cases (52 boys and 11 girls) were treated at the University Skin Clinic. The patients' ages ranged from two to 12 years, most of them being between five and ten. There were 52 positive and 11 negative responses to the intracutaneous injection of trichophytin. *Microsporum audouinii* was the only species isolated in pure culture. Of 51 children subjected to repeated depilation with barium sulphide and local applications of 1 per cent. myxal [? mycal] oil (triphenyldodecylphosphoniumbromide) supplied by K. Thomae, GmbH., Biberach a.d. Riss, 41 were cured in an average period of 11 weeks.

2332. LEFRANC (M.). **La teigne en milieu scolaire urbain.** [Tinea among urban schoolchildren.]—*Algér. méd.*, 54, 8, pp. 446–448, 1950.

During the school year of 1947–8, 531 out of 1,032 children examined at Algiers were found to be suffering from tinea, while the corresponding proportion in 1948–9 was 534 out of 1,190. The importance of Wood's light in diagnosis is emphasized and some observations are made on the functions of the school medical and social services in connexion with radiotherapy and after-care.

2333. MATILLA (V.) & PEÑA YAÑEZ (J.). **Estudios sobre la flora dermatofítica de España. I. Comunicación. Una técnica sistemática para el aislamiento y obtención de cultivos puros.** [Studies on the dermatophytic flora of Spain. Note I. A systematic technique for the isolation and procurement of pure cultures.]—*Med. colon., Madr.*, 18, 5, pp. 371–379, 1951. [French, English, and German summaries.]

A systematized technique is described for the isolation of dermatophytes which reduces to a minimum fungal and bacterial contamination and enables pure cultures to be obtained in the first isolation without any treatment of the samples. Only two tubes of Sabouraud's honey agar were used for each of the 80 specimens received from different parts of Spain, which yielded 73 strains of dermatophytes [Nos. 2168, 2169].

2334. MATILLA (V.) & PEÑA YAÑEZ (J.). **Estudios sobre la flora dermatofítica de España. II. Comunicación. Especies aislados.** [Studies on the dermatophytic flora of Spain. Note II. Species isolated.]—*Med. colon., Madr.*, 19, 1, pp. 3–10, 1952. [French, English, and German summaries.]

The 51 strains of dermatophytes isolated from the same number of patients in Spain [No. 2333] were identified as follows: from 31 in Madrid and its environs, 12 *Trichophyton violaceum*, 2 each of *T. mentagrophytes* and *T. tonsurans*, 1 *T. schoenleini*, 5 *Microsporum audouinii*, and 9 *M. canis*; from Cadiz and the vicinity, 9 *T. schoenleini*, 3 *T. tonsurans*, and 1 each of *T. violaceum*, *T. mentagrophytes*, and *T. sabouraudi*; and from three provinces, 3 *T. schoenleini* and 2 *M. canis*.

2335. SÁ PENELLA (L.). **Estatística da consulta de tinhas (1935–1949).** [Statistics of consultation for tinea (1935 to 1949).]—*Comun. II Congr. luso-esp. Derm., Lisboa, 1950*, pp. 247–248, 1950. [Abs. in *Dermatol. & Venereol. (Excerpt. med., Sect. XIII)*, 6, 2, pp. 61–62, 1952.]

During the 15-year period under review, 3,036 patients over three years of age suffering from tinea [? in Portugal] were depilated by the Keinböck-Adamson method without untoward after-effects. *Trichophyton violaceum* was identified in 75 out of 85 cases investigated, while *T. acuminatum* [*T. sabouraudi*], *T. crateriforme* [*T. tonsurans*], and *Microsporum felineum* [*M. canis*]

were also encountered. The 3,500 cases of tinea included 2,595 of trichophytosis (representing 76 per cent. of those which it was practicable to investigate), 404 of favus (11.8), and 310 of microsporosis (9). Only 14 patients developed a marked inflammatory reaction.

2336. SAMPAIO (N.). **Sobre as tinhas da ilha da Madeira.** [On the tineas of the island of Madeira.]—*Comun. II Congr. luso-esp. Derm., Lisboa, 1950*, pp. 263–266, 1950. [Abs. in *Dermatol. & Venereol. (Excerpt. med., Sect. XIII)*, 6, 2, p. 61, 1952.]

E[pidermophyton] cerebriforme [*Trichophyton flavum*] was identified as the agent in five out of 11 cases of tinea at Funchal, Madeira, *T. acuminatum* [*T. sabouraudi*], and *T. violaceum* in two each, and *Achorion* [*T.*] *schoenleini* in one.

2337. LEWIS (G. M.), SACHS (W.), & HOPPER (MARY E.). **Some facts and fallacies relating to superficial fungous disease.**—*N.Y. St. J. Med.*, 50, 22, pp. 2686–2690, 2 figs., 1950.

Some of the more important clinical manifestations of the superficial mycoses occurring in the United States are briefly described, including tinea capitis (*Microsporum audouinii* and *M. lanosum* [*M. canis*]), athlete's foot (*Trichophyton gypsum*, *T. purpureum* [*T. rubrum*], and *Epidermophyton floccosum*), tinea barbae (*T. gypsum* [*T. mentagrophytes*]), tinea circinata (*M. canis*), and moniliasis (*Candida albicans*). Accurate diagnosis by laboratory methods is considered definitely advantageous to corroborate the clinical impression and facilitate prognosis and the choice of therapy. Dermatophytid is less common than might be expected from its frequent diagnosis, the majority of eruptions observed on the hands being attributable either to contact dermatitis or atopic eczema or both.

2338. PIRILÄ (V.). **Jalkasilsasta teollisuuden työläisillä.** [Athlete's foot in industrial workers.]—*Duodecim*, 67, pp. 208–215, 1951. [Abs. in *Dermatol. & Venereol. (Excerpt. med., Sect. XIII)*, 5, 9, p. 396, 1951].

Fungi were detected microscopically and by culture in 41 out of 68 cases of athlete's foot, by culture only in 13, and microscopically only in 14. In the polyclinic for occupational skin diseases in Helsinki, Finland, the incidence of athlete's foot from 1947 to 1949 was 3.5 per cent., with definite clinical symptoms in 2.7 per cent. Some further cases were revealed by visits to industrial premises, but no evidence of contamination through the common bathing rooms was forthcoming.

2339. HAZEN (ELIZABETH L.). **Effect of nutrition on the colony characteristics and macroconidial formation of *Microsporum audouinii*.**—*Mycologia*, 43, 3, pp. 284–296, 4 figs., 1951.

In a cultural study of *Microsporum audouinii* the fungus produced a feeble, submerged mycelium on rice infusion agar, but the addition of glucose and asparagine, combined or separately, increased mycelial development. The addition of yeast extract markedly promoted vegetative growth, maximum development occurring when glucose, asparagine, and yeast extract were added in combination. The fungus was able to utilize ammonium as a source of nitrogen, but mycelial growth was stimulated by the substitution of asparagine for ammonium chloride and still further by the addition of yeast extract. There were indications that inositol and some other factor in yeast extract favour macrospore production. The abundance of macrospores seemed to depend more on some property of the strain than on the medium used. Further work is in progress.

2340. LEINBROCK (A.), SCHUSTER (H.), & ZINZIUS (J.). **Die Behandlung der Mikrosporie mit einem dem Conteben nahestehenden Chemotherapeuticum (V741).** [The treatment of microsporiasis with a chemotherapeutant allied to conteben (V741).]—*Hautarzt*, 2, 5, pp. 222–229, 1951.

Full details are given of clinical trials at the University Skin Clinic, Bonn, Germany, in the treatment of 53 children suffering from tinea capitis (*Microsporum audouini*) with a thiosemicarbacide derivative known as V741, supplied by the Bayer Laboratories, Elberfeld. The results were highly encouraging, and the preparation is considered to be the best at present available for the topical therapy of the complaint.

2341. VERCRUYSSÉ (A.). **Résultats comparatifs de divers modes de traitement des teignes microscopiques [? microsporiques].** (Comparative results of various methods of treatment of microscopic [? microsporic] tissues.)—*Arch. belg. Derm.*, 6, 2, pp. 76–82, 1950.

The following percentages of cures within a maximum period of two months were obtained among 60 children at the Hôpital Sainte-Elisabeth, Antwerp, Belgium, treated by various methods for microsporiasis of the scalp (*Microsporum felineum* [*M. canis*] and *M. audouini*); radiotherapy (400 r. at a distance of 30 cm., 65 kw.), 100; local applications of penicillin cream (1,000 units per gm.), 22; 10 per cent. salicylic acid, 21; 1 per cent. tyrothricin [No. 2023], 34; and thallium acetate epilation (7 to 8 mg. per kg. body weight), 40. Radiotherapy is attended by grave risks, four of the 13 children so treated having developed alopecia, followed in one case by a fatal necrosis of the cranium and cerebral hemispheres, and it was consequently discontinued. Thallium acetate epilation is also dangerous, having been followed in five out of nine cases by fever and gastro-intestinal complications and in one by albuminuria.

Favourable results with the same mode of treatment were two to three times more frequent in cases of infection by *M. canis* than in those caused by *M. audouini*.

2342. EL-MOSLEMANI (A. A.). **Ringworm of scalp in Egyptian children.**—*J. Egypt. med. Ass.*, 34, 6, pp. 409–410, 1951.

Of 17 cases of tinea of the scalp among children between nine months and ten years old in Cairo hospitals, 13 were associated with *Microsporum audouini* and four with a *Trichophyton* of the endothrix group.

2343. MINTZER (IDA J.) & ELIASSOW (A.). **Topical treatment of tinea capitis.**—*N.Y. St. J. Med.*, 51, 10, pp. 1310–1312, 1951.

At Queens General Hospital, Jamaica, New York, 43 cases of tinea capitis (*Microsporum audouini*) were treated by local applications of decupryl, a preparation supplied by Crookes Laboratories, Inc., New York City, containing 10 per cent. copper undecylenate and 5 per cent. undecylenic acid with aerosol in a volatile liquid base consisting of isopropanol and tetrachloroethylene in equal parts. Twelve of the patients were lost from observation before completion of the course; of the remaining 31, two were still under treatment at the close of the survey, 21 were cured after periods ranging from three to 39 weeks, and eight who failed to respond were referred for X-ray epilation.

2344. APPEL (B.), TYE (M. J.), HALPERN (W.), & PACI (DOMENICA). **Microsporiasis of the scalp. Evaluation of a new therapeutic agent.**—*New Engl. J. Med.*, 245, 26, pp. 1003–1006, 1 fig., 1951.

At the Department for Diseases of the Skin, Boston City Hospital, asterol dihydrochloride in 2 per cent. water-soluble ointment and 2 per cent. tincture was tested *in vitro* and *in vivo* for the control of tinea capitis (*Microsporum*

audouini and *M. canis*) [No. 2322 and next entry]. The tincture proved more effective than the ointment, judging by the results of *in vitro* tests on infected hairs; neither completely suppressed viability but the former inhibited the growth of *M. audouini* in all the cultures. Of 30 children treated for more than three months 10 were cured (five out of six cases of *M. canis* and five out of 24 of *M. audouini*). None of the 31 treated for less than three months were cured, but no definite conclusions are drawn from this series because of the brief period of observation.

2345. EDELSON (E.), CRASTER (C.), & HASKIN (A.). **Evaluation of a new drug for topical therapy of tinea capitis.**—*Arch. Derm. Syph., Chicago*, 64, 4, pp. 444–448, 1 graph, 1951.

Of 72 children aged 1 to 11 years (59 boys and 13 girls) treated at Newark, New Jersey, against tinea capitis (*Microsporum audouini*) with asterol (the dihydrochloride of 2-dimethylamino-6-(beta-diethylamino-ethoxy-benzothiazole) [see preceding entry]), 48 (66·6 per cent.) showed no infected hairs under Wood's light after therapy, 17 (23·7) revealed varying degrees of improvement, while the condition of seven (9·7) remained unchanged.

2346. LAUR (W. E.). **Spontaneous cure of tinea capitis due to *Microsporon audouini*.**—*Arch. Derm. Syph., Chicago*, 64, 3, pp. 364–366, 1951.

Of 61 children of 12 years and under included in a follow-up survey of 109, aged 9 to 17, found 3½ to 4 years previously to be infected by *Microsporum audouini* at Detroit, Michigan [No. 985], 43 were considered to have received inadequate treatment, and of these 28 (65·1 per cent.) showed no fluorescent hairs on examination under Wood's light, suggesting the possibility of spontaneous prepubertal cure. The corresponding figure for the group of 18 receiving adequate treatment was 13 (72·2 per cent.).

In the 13- to 17-year age group (total of 48), the numbers receiving adequate and inadequate treatment were 13 and 35, respectively, and the incidence of cures 10 (76·9 per cent.) and 26 (74·3 per cent.), respectively.

2347. SCULLY (J. P.) & KLIGMAN (A. M.). **Coincident infection of a human and an anthropoid with *Microsporum audouini* : report of a case.**—*Arch. Derm. Syph., Chicago*, 64, 4, pp. 495–498, 2 figs., 1951.

A case of concurrent infection of a 46-year-old female and a five-month-old pet capuchin monkey by *Microsporum audouini* is reported from the University of Pennsylvania School of Medicine, Philadelphia. Several other humans also contracted the disease from the animal. Unusual features of the fungus in pure culture included profuse formation of exceptionally regular macroconidia, rapid growth, and capacity for development on a rice medium.

2348. SHARP (W. B.). **Relationship of *M. gypseum* with other dermatophytes.**—*Tex. Rep. Biol. Med.*, 9, 4, pp. 796–803, 1951.

In cross-precipitation tests at the University of Texas School of Medicine, the serological relationship between *Microsporum gypseum* [Nos. 577, 1747] on the one hand and *M. audouini* and *M. canis* on the other was shown to be less close than that between the two last-named species. Moreover, an endotoxic product present in various dermatophytes was demonstrated by animal inoculation experiments to be present in much greater abundance in *M. gypseum* than in either of the other species.

2349. VAN UDEN (N.). **Eine einfache Methode zum Studium der Pilzmorphologie im allgemeinen und der vegetativen Anastomosen im besonderen. Zugleich ein Beitrag zur Frage der systematischen Position des *Microsporum canis* Bodin (1902) und des *Microsporum langeroni* Vanbreuseghem (1950).** [A simple

method for the study of fungus morphology in general and of the vegetative anastomoses in particular. Together with a contribution to the question of the systematic position of *Microsporum canis* Bodin (1902) and *Microsporum langeroni* Vanbreuseghem (1950).]—*Arch. Derm. Syph., Berl.*, 193, 5, pp. 463–484, 7 figs., 1951.

From the Botanical Institute, Lisbon, the author describes a slide culture method whereby the layer of nutrient medium is reduced to an invisible film so that fungal growth proceeds on a single plane. In this way observation is not hampered by the superimposition of fungal elements and staining can be effected without interference by a pigment-absorbing layer of nutrient. These conditions are essential in studies on vegetative anastomoses, as exemplified in the author's experiments with species of *Microsporum*. Five strains isolated in Portugal formed clamp-connexions with each other and with seven strains from different parts of the world, all having been designated by their senders as *M. felineum*, *M. lanosum*, or *M. canis*. Hence it was concluded that the 12 strains belong to a single widely disseminated species, confirming Conant's view (*J. invest. Derm.*, 4, p. 265, 1941) that *M. felineum* and *M. lanosum* are identical with the older *M. canis*.

No anastomoses were formed between two strains of *M. langeroni* and four of *M. audouini* in a large number of tests. These negative results do not absolutely prove that the species are distinct, since other factors may operate in the failure to produce clamp-connexions, but they tend to support Vanbreuseghem's conclusion that such is the case.

2350. BACARINI (I.) & DINIZ (O.). **Pityriasis simplex faciei. (Bemerkungen über die Ätiologie und Therapie.)** [Pityriasis simplex faciei. (Observations on etiology and therapy).]—*Rev. Assoc. méd. Minas Gerais*, 1, pp. 113–134, 1949. (Portuguese.) [Abs. in *Zbl. Haut- u. GeschlKrankh.*, 77, 4–5, p. 205, 1951.]

Out of 23 cultures obtained from 250 schoolchildren suffering from pityriasis simplex faciei in Minas Gerais, Brazil, two yielded *Microsporum felineum* [*M. canis*]. The condition is attributed primarily to vitamin deficiency, the correction of which resulted in a number of improvements and cures.

2351. YOUNG (C. J.). **Podophyllotoxin treatment of *Microsporum audouini* scalp infections.**—*Arch. Derm. Syph., Chicago*, 64, 5, pp. 607–610, 2 figs., 1951.

Hairs infected by *Microsporum audouini* show no growth on transference to Sabouraud's dextrose medium after one minute's exposure to a 3·3 per cent. alcoholic solution of podophyllotoxin (the active principle of podophyllin [No. 1795]). Treatment with a 1 per cent. solution results in retardation of growth after five minutes' contact and complete cessation after an hour.

Nine of the 14 negro patients treated daily for one month at Oklahoma City by topical applications of 3·3 per cent. podophyllotoxin in alcohol were clinically and mycologically cured. The compound is believed to be directly fungicidal, besides tending to induce a sufficient follicular reaction to loosen infected hairs.

2352. TÉMIME (P.) & RANQUE (J.). **Considérations générales à propos de 1016 cas de teignes d'origine nord-africaine (note préliminaire).** [General considerations in connexion with 1,016 cases of ringworm of North African origin (preliminary note).]—*J. Méd. Bordeaux*, 128, 1, pp. 259–260, 1951.

Of 166 positive cultures obtained from 1,016 North African cases of tinea capitis in transit camps near Marseilles during 1948–9, 126 (75·8 per cent.) yielded *Trichophyton violaceum*, 8 (5) *T. acuminatum* [*T. sabouraudi*], 3 (1·8) each *T. cerebriforme* [*T. flavum*] and *T. sulphureum*, 15 (9) *T. schoenleini*, and 11 (7) undetermined *T. spp.*

2353. PEREIRO MIGUENS (M.). **Nota previa sobre la acción antibiótica de un 'Penicillium' frente a los dermatofitos.** [Preliminary note on the antibiotic action of a *Penicillium* on dermatophytes.]—*Act. dermat.-sif., Madr.*, 42, 8, pp. 806-807, 2 figs., 1951.

At the Faculty of Medicine, Santiago de Compostela, Spain, a species of *Penicillium* originating as an accidental contaminant in a Petri dish culture of *Trichophyton acuminatum* [*T. sabouraudi*] was observed to inhibit the growth of the dermatophyte. In preliminary tests 1 ml. of a filtrate of the mould from a 30-day-old culture in a honey-peptone medium exerted a clear-cut antibiotic action on *T. mentagrophytes* in a tube of Sabouraud's agar, and a similar result was obtained by the incorporation of a small quantity of the filtrate in a crystal ring with a Petri dish culture of the dermatophyte.

2354. VILANOVA (Y.), CASANOVAS (M.), & LECHA (E.). **Resultados de las pruebas intradérmicas con tricoftina y levurina en diversas dermatopatías.** [Results of intradermal tests with trichophytin and levurin in various dermatopathies.]—*Act. dermat.-sif., Madr.*, 41, pp. 806-818, 1950. [Spanish. Abs. in *Zbl. Haut- u. Geschl.Krankh.*, 77, 4-5, pp. 206-207, 1951.]

Intracutaneous tests with trichophytin (from *Trichophyton gypsum* [*T. mentagrophytes*]) and levurin (*Candida albicans*) were performed in Spain on 265 sick persons, of whom 101 were suffering from dermatomycoses. Of the cases caused by yeast-like fungi, 34 per cent. reacted positively to trichophytin and 91 per cent. to levurin. Notwithstanding negative cultural findings, the maximum number of positive reactions occurred in cases of eczema located in sites liable to fungal infection, e.g., between the toes, the inguinal region, and the nails.

2355. SOKOLOFF (O.). **Clinical evaluation of 'diphenylpyraline' as an antifungal agent.**—*Arch. Derm. Syph., Chicago*, 64, 6, pp. 754-756, 1951.

The following conclusions are reached on the basis of the author's experience with 103 patients in his practice at New Brunswick, New Jersey, in the therapy of various dermatomycoses with 2 per cent. diphenylpyraline (1-methyl-piperidyl-4 benzhydryl ether) [No. 1569], supplied by the Nopco Chemical Company, Harrison, New Jersey. An excellent clinical response, with no untoward reactions, was elicited by the treatment in all 37 cases of tinea pedis (25 *Trichophyton gypsum* [*T. mentagrophytes*], 9 *T. purpureum* [*T. rubrum*], and 3 *Epidermophyton inguinale* [*E. floccosum*]), many of which were of long standing and refractory to the usual anti-fungal agents. The treatment was also highly beneficial in 24 cases of tinea cruris (*E. floccosum*), tinea corporis (9) and tinea capitis (4) due to *Microsporum lanosum* [*M. canis*], two each of tinea axillaris (*T. rubrum*), tinea versicolor (*M[alassezia] furfur*), and monilial intertrigo (*M[onilia = Candida] albicans*), and one of tinea sycosis and barbae (*T. mentagrophytes*).

2356. CRAIG (G. E.), BLANK (F.), & DANBY (C. W. E.). **Tinea capitis due to species of the genus Trichophyton.**—*Canad. med. Ass. J.*, 65, 5, pp. 480-481, 1951.

At the Royal Victoria Hospital, Montreal, and in private practice during the past four months the authors investigated 12 cases of tinea capitis in which the hair did not fluoresce under Wood's light. The ages of the patients ranged from 1½ to 23 years and six were immigrants. The species concerned were *Trichophyton tonsurans*, *T. schoenleini* (four each), *T. violaceum* (three), and *T. ochraceum* (one).

2357. HONORATO (A.), SALUCCI (V.), & ROJAS (H.). **Frecuencia y agentes etiológicos de la dermatoficia podal en Valparaiso.** [Frequency and etiological agents

of foot dermatophytosis at Valparaiso.]—*Rev. méd. Valparaiso*, 4, 1, pp. 68–72, 6 figs., 1951.

Of 660 young male subjects (military and naval personnel) examined at Valparaiso, Chile, 153 (22.6 per cent.) were affected by tinea pedis, and cultures from 56 (35.9 per cent.) on honey agar were positive. Of the 30 strains of pure dermatophytes isolated, 23 (76.6 per cent.) were identified as *Trichophyton mentagrophytes*, six (20) as *T. rubrum*, and one (3.4) as *T. sabouraudi* [No. 1760].

2358. EMMERSON (B. T.). **A survey of the incidence of interdigital tinea in a group of students from the University of Queensland.**—*Med. J. Aust.*, 38 (ii), 25, pp. 837–842, 1951.

Of 400 male students examined at the University of Queensland, 119 (29.75 per cent.) were found to be infected by interdigital tinea [*Trichophyton interdigitale*]; of this number 108 (27 per cent.) had led some form of corporate life. Only two of the 100 women included in the survey were infected, and that in a mild form. Fifty (37 per cent.) of the infected males were in the 20- to 22-year-old age group, 39 (27.3) were aged 17 to 19, 16 (26.6) from 23 to 25, and 14 (22.6) 26 and upwards. Effective therapeutic products are a mixture of salicylic and benzoic acids and dermecyl (Drug Houses of Australia), containing 10 per cent. undecylenic acid and 5 per cent. zinc undecylenate.

2359. FARAGÓ (L.) & POLGÁR (P.). **Das para-chlor-benzoesaure Natrium als neues Antimycoticum.** [Para-chlor-benzoic acid sodium as a new antimycotic.]—*Bőrgyóg. Szem.*, 4, pp. 85–88, 1950. [Hungarian. Abs. in *Zbl. Haut- u. Geschl. Krankh.*, 77, 6–7, p. 288, 1951.]

In *in vitro* experiments with solutions of the non-irritant para-chlor-benzoic acid sodium ranging from 0.1 to 1 per cent. even the minimum dosage was effective against *Trichophyton crateriforme* [*T. tonsurans*] and strains of *Scopulariopsis* and *Epidermophyton*. Of 78 patients treated with 2 to 5 per cent. solutions (mostly against *E. inguinale* [*E. floccosum*]), 25 were cured and 20 benefited. A superficial trichophytosis of endemic occurrence among a troop of wrestlers was completely cured after 10 to 12 days' treatment.

2360. FISHER (A. A.), FRANKS (A. G.), WOLF (M.), & LEIDER (M.). **Concurrent infestation with a rare mite and infection with a common dermatophyte.**—*Arch. Derm. Syph., Chicago*, 63, 3, pp. 336–342, 5 figs., 1951.

From the New York University Post-Graduate School the authors report, with comments on the relevant literature, a case of concurrent infestation with *Dermatophagoides scherehewskyi* and *Trichophyton rubrum* in a 15-year-old boy. The fungus was consistently isolated from the soles of both feet and the thumb and middle finger nails and palm of the right hand, while the mite appeared in a scraping from the soles cleared with potassium hydroxide.

2361. FÖLDVÁRI (F.) & POLGÁR (P.). **À propos de divers symptômes dûs au *Trichothecium roseum*.** [Concerning various symptoms due to *Trichothecium roseum*.]—*Dermatologica*, 102, 3, pp. 135–139, 6 figs., 1951. [German and English summaries.]

At the Dermatological Clinic of the Eötvös Lóránd University, Budapest, Hungary, *Trichothecium roseum* [No. 1328] was isolated on Sabouraud's agar and a peptone-glycerine medium from an eruption on the lower right leg of a 50-year-old woman and from a swelling of the forearm and right hand of her 14-year-old daughter. The positive intradermal reactions of both patients to an extract prepared from the cultures were considered to afford further evidence of the pathogenicity of the fungus.

2362. FRANKS (A. G.), ROSENBAUM (E. M.), & MANDEL (E. H.). *Trichophyton sulfureum* causing erythema nodosum and multiple kerion formation.—*Arch. Derm. Syph.*, Chicago, 65, 1, pp. 95-97, 1952.

A case of multiple kerion formation on the scalp and erythema nodosum of the legs in a nine-year-old Puerto Rican boy is reported from the New York Skin and Cancer Hospital, the causal organism being *Trichophyton sulphureum* [No. 1752]. The nodose lesions healed spontaneously with inversion of the kerion following a fortnight's treatment with a saturated solution of boric acid.

2363. GEORG (LUCILLE K.). The relation of nutrition to the growth and morphology of *Trichophyton violaceum*. I. The vitamin and amino acid requirements of *T. violaceum*.—*Mycologia*, 43, 3, pp. 297-309, 3 figs., 1951.

Of 11 strains of *Trichophyton violaceum* studied on synthetic media, ten displayed a partial requirement for thiamine, the minimum effective quantity being 0.002 μ gm. in 5 ml. ammonium nitrate. Growth of the thiamine-deficient strains was stimulated by comparatively large doses of para-aminobenzoic acid. In the presence of maximum effective dosages of thiamine, further stimulation was given by the addition of casein or other peptones. One strain (No. 365) was morphologically and physiologically distinct from the others, in that it grew rapidly on Sabouraud's dextrose agar, producing a white, fluffy colony with numerous microconidia. It developed in single-spore cultures with characters identical with those of the other ten strains, and is regarded as a mutant.

2364. SCOTT (M. J.). *Piedra*: report of a case.—*Arch. Derm. Syph.*, Chicago, 64, 6, pp. 767-773, 6 figs., 1951.

A case of white piedra (*Trichosporon beigelii*) [No. 1480] affecting the scalp hair of a 16-year-old native-born American male, who had never left the central and north-eastern sections of the United States, is reported from New York, this being the first record of the pathogen in North America. Diagnosis was established by clinical features, potassium hydroxide preparations, exclusion of other possibilities, and consultation with authorities of wide experience.

2365. REIDEL (B. B.). *Favus* and its treatment with a quaternary ammonium compound.—*Poult. Sci.*, 29, pp. 741-742, 1950. [*V.B.*, 21, No. 980.]

Experimental infection of chickens with *Achorion gallinae* [Nos. 1058, 1264] was successful only when breaks in the skin were present. Control resulted from one application of a 2 per cent. mixture of quaternary ammonium compounds consisting of equal parts of alkyl-dimethyl-benzyl-ammonium chloride and alkyl-dimethyl-dichlor-benzyl-ammonium chloride.

2366. GORDON (M. A.). The lipophilic mycoflora of the skin. I. In vitro culture of *Pityrosporum orbiculare* n.sp.—*Mycologia*, 43, 5, pp. 524-535, 2 figs., 1951.

Pityrosporum orbiculare n.sp., isolated from the epidermis of the shoulders, neck, chest, back, or upper arms of 15 persons (13 strains from tinea versicolor scales, two from apparently normal skin), is characterized by spherical cells, usually in clusters on artificial media, double-contoured, 2.1 to 4.8 (mostly 2.8 to 3.8) μ in diameter, producing single (rarely two or three) spherical to oval buds on a narrow base. On Sabouraud's or wort agar growth is very sparse unless olive oil or other fatty material is layered on the surface, but on Sabouraud's agar and other media with olive oil or stearic acid excellent growth occurred at 37° C. after one week, though none took place at 25° after two weeks. There was no growth with oleic acid or mineral oil and, in most strains, none with glycerine. On glucose-peptone broth overlaid with olive oil, growth occurred only at the interface. The genus *Pityrosporum* Sabouraud is emended to include the new species.